



KTConnects
Knowledge Translation Webinar Series

Understanding Indigenous Knowledge: An insider's theory



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 **Michael Smith
Health
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What is knowledge, generally?

What is knowledge, generally?

- facts, information, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject.

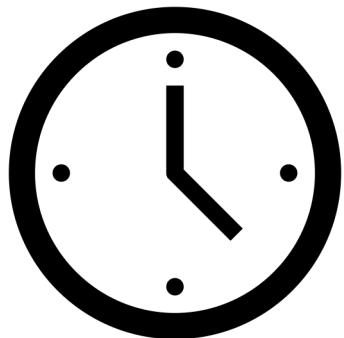
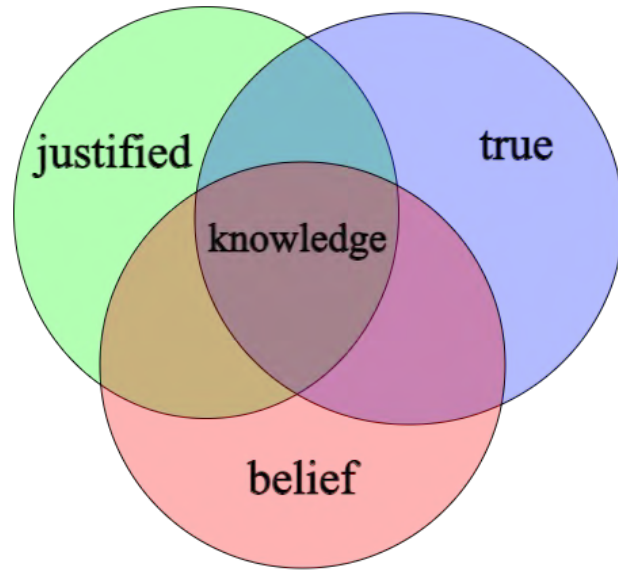
...an enlightening experience.
...the process of receiving or giving systematic instruction

- awareness or familiarity gained by experience of a fact or situation.

...practical contact with and observation of facts or events.

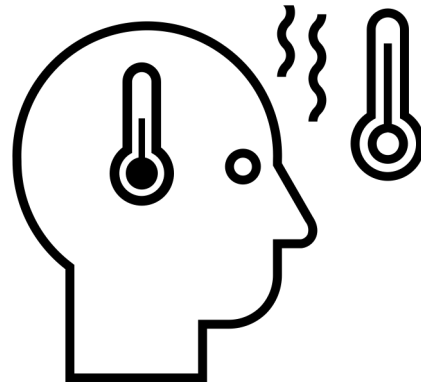
Phenomenon - a fact or situation that is observed to exist or happen, especially one whose cause or explanation is in question.

Justified True Belief



Generic Reliablism

Knowledge is true belief
which results from a *de facto*
reliable process



Intellectual Virtue

Knowledge is claimed to
result from the exercise of
intellectual virtue instead of
just a reliable process

“...qualities that make us
excellent thinkers.”

“...deep personal qualities or
character strengths required
for **good** thinking and
learning.”

“I hope to count a great coup...”



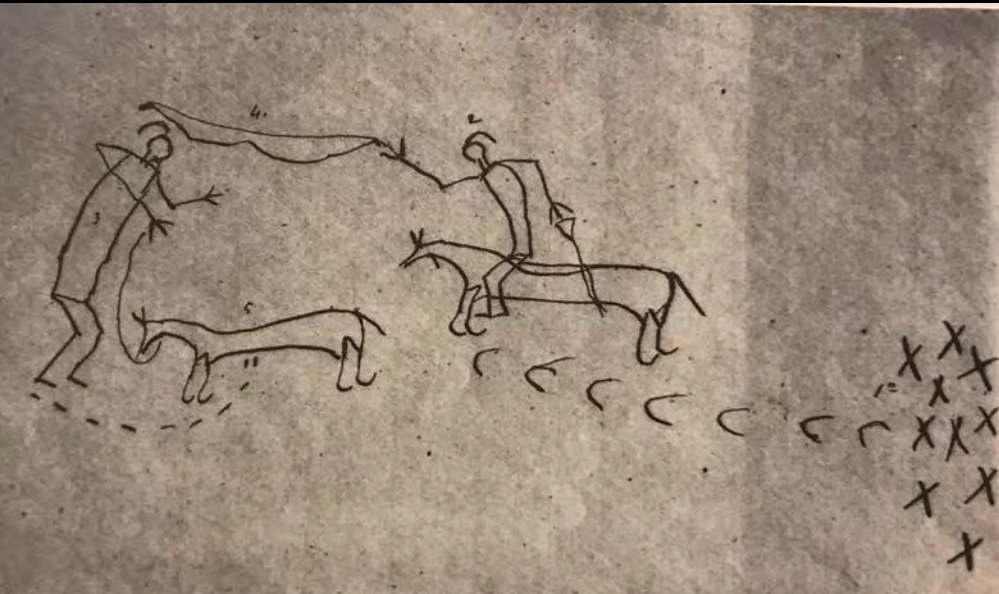
“...because to do good you must
be listened to, and to be
listened to you must be brave.”

“...because to do good you must be listened to, and to be listened to you must be brave.”

you must be brave

be listened to

to do good



Taxonomy of Knowledge

- Propositional Knowledge
"know-that"
- Ability Knowledge
"know-how"
- Acquaintance knowledge - our mothers, our friends, our pets, etc.
- Knowledge of facts - propositional knowledge, or knowledge-that
- Knowing how to do something - play the piano, make a pie, walk, speak, create, build, and so on.

Pritchard, D. (2013). *What is this thing called knowledge?*. Routledge.

Pavese, Carlotta, "Knowledge How", *The Stanford Encyclopedia of Philosophy* (Fall 2022 Edition), Edward N. Zalta & Uri Nodelman (eds.)

Taxonomy of Knowledge

- Empirical Knowledge – obtained through the use of our senses
- Rational Knowledge - proportional relationship between the parts of something
- Conventional Knowledge - generated by human imagination and agreed upon by a cultural community
- Conceptual Knowledge - compounds of knowledge built into patterns and other coherent ensembles.
- Cognitive Process Skills - conventionalized strategies for how to think, specific to particular contexts and purposes.
- Psychomotor Knowledge - Physical skills and routines
- Affective Knowledge - intuitive knowledge of one's felt state, the emotional and aesthetic dimensions of human experience
- Narrative Knowledge - the way the world appears to us through experience
- Received Knowledge - spiritual side of human experience and life

Taxonomy of Knowledge

- Tacit - Knowledge rooted in actions, experience, and involvement in specific context
- Explicit - Articulated, generalized knowledge
- Individual - Created by and inherent in the individual
- Social - Created by and inherent in collective actions of a group
- Conscious - Explicit knowledge of an individual
- Automatic - Individual's tacit, subconscious knowledge
- Objectified - Codified knowledge of a social system
- Collective - Tacit knowledge of a social system
- Declarative - Know-about
- Procedural - Know-how
- Causal - Know-why
- Conditional - Know-when
- Relational - Know-with
- Pragmatic - Useful knowledge for an organization

...What is indigenous knowledge?

A “cumulative body of knowledge, practices, and beliefs, evolving and governed by adaptive processes and handed down and across (through) generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment”

Díaz, S., Demissew, S., Carabias, J., Joly, C., Lonsdale, M., Ash, N., ... & Zlatanova, D. (2015). The IPBES Conceptual Framework—connecting nature and people. *Current opinion in environmental sustainability*, 14, 1-16.

...What is indigenous knowledge?

“Indigenous knowledge is an adaptable, dynamic system based on skills, abilities, and problem-solving techniques that change over time depending on environmental conditions, making the taxonomic approach difficult to justify or verify. Most Indigenous scholars and educators have noted the practical and conceptual limitations of taxonomic categories posing as Indigenous knowledge.”

Battiste, M. (2005). Indigenous knowledge: Foundations for first nations. *WINHEC: International Journal of Indigenous Education Scholarship*, (1), 1-17.

Table 1: Comparison of Indigenous and Scientific Knowledge

Aspects of Knowledge	Indigenous Knowledge	'Scientific' Knowledge
1. Scope	<ul style="list-style-type: none"> • Sacred and secular together; includes the supernatural • Holistic of integrated - based on whole systems • Stored orally and in cultural practices 	<ul style="list-style-type: none"> • Secular only; excludes the supernatural • Analytical or reductionist - based on sub-sets of the whole • Stored in books and computers
2. Truth Status	<p>Assumed to be the truth</p> <ul style="list-style-type: none"> • Subjective • Truth found in nature and faith • Explanation based on examples, experience and parables 	<p>Assumed to be a best approximation of truth</p> <ul style="list-style-type: none"> • Truth found from human reasoning • Explanations based on hypotheses, theories and laws
3. Purpose	<p>Long-term wisdom</p> <ul style="list-style-type: none"> • Practical life and survival • Powerful predictability in local areas (ecological validity) • Weaker in productive principles in distant areas 	<p>Short-term prediction</p> <ul style="list-style-type: none"> • Abstract; to pass examinations • Powerful predictability in natural principles (rational validity) • Weak in local use of knowledge
4. Methods of Teaching and Learning	<p>Lengthy period of acquisition ('slow knowledge')</p> <ul style="list-style-type: none"> • Learning by living, experiencing and doing • Teaching through example, modelling, ritual and storytelling • Tested in practical life situations 	<p>Rapid acquisition ('fast knowledge')</p> <ul style="list-style-type: none"> • Learning by formal education • Teaching is didactic • Tested artificially in examinations

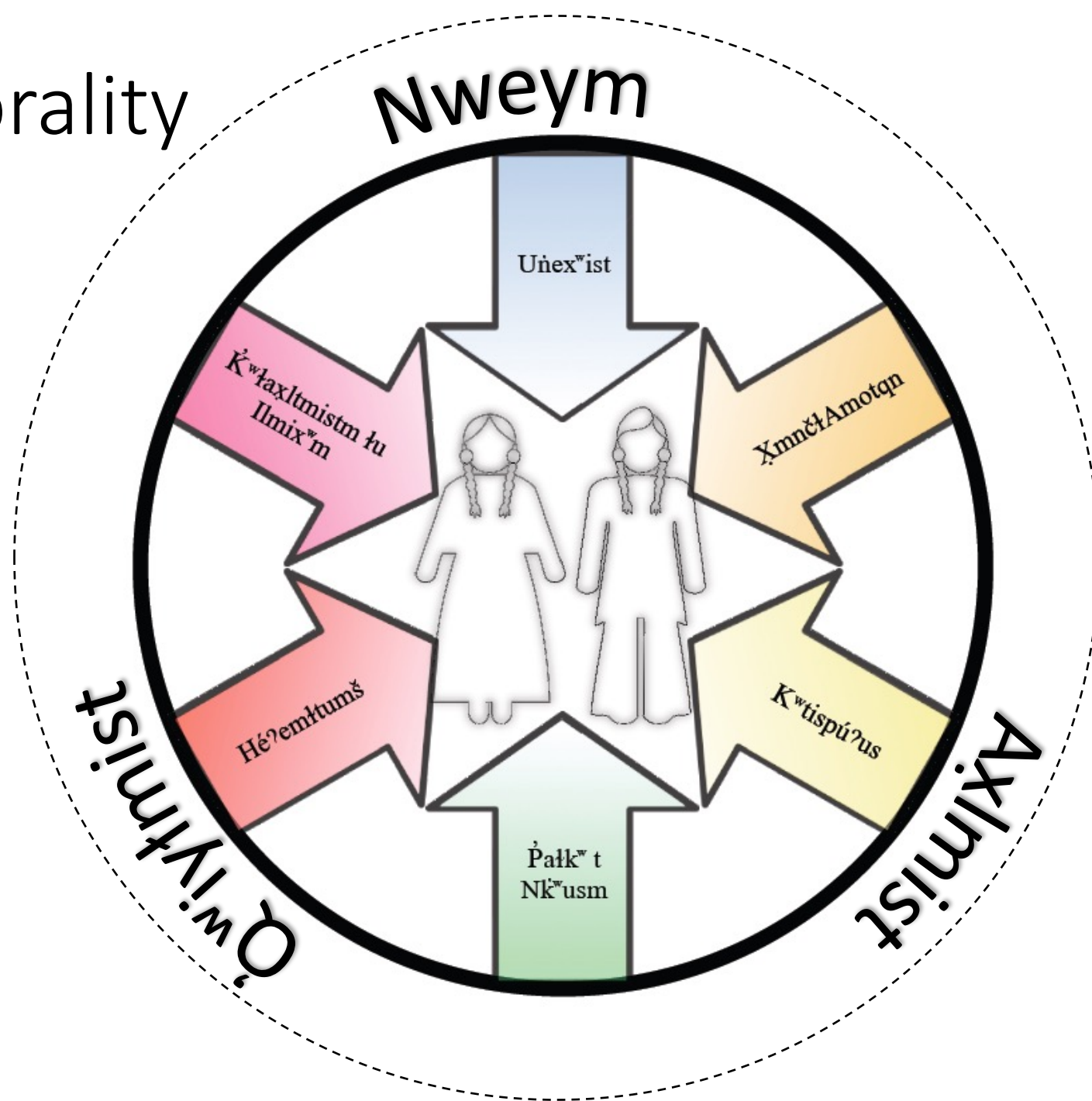
Source: Rahum Ulluwisheha, Abdul Aziz Kalako & Dyharuni Hj Mohamed Monican (1997)
Indigenous Knowledge and Environmental Education

Indigenous communities generally describe Indigenous knowledge as:

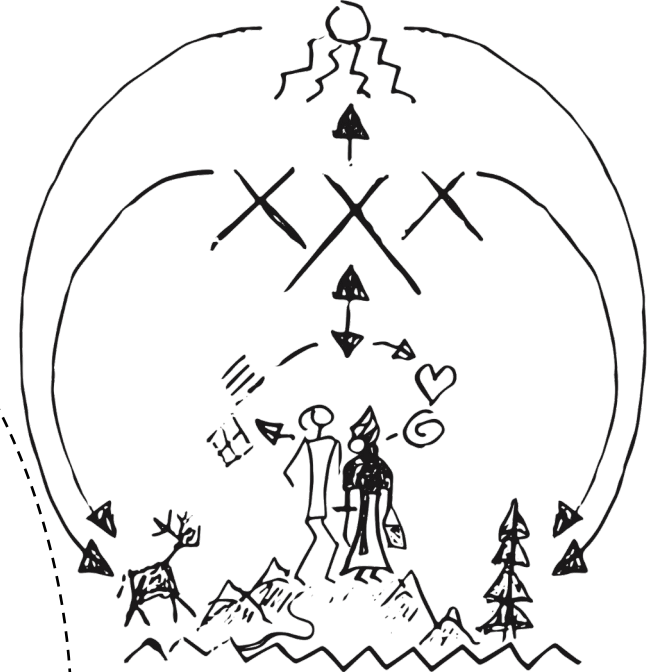
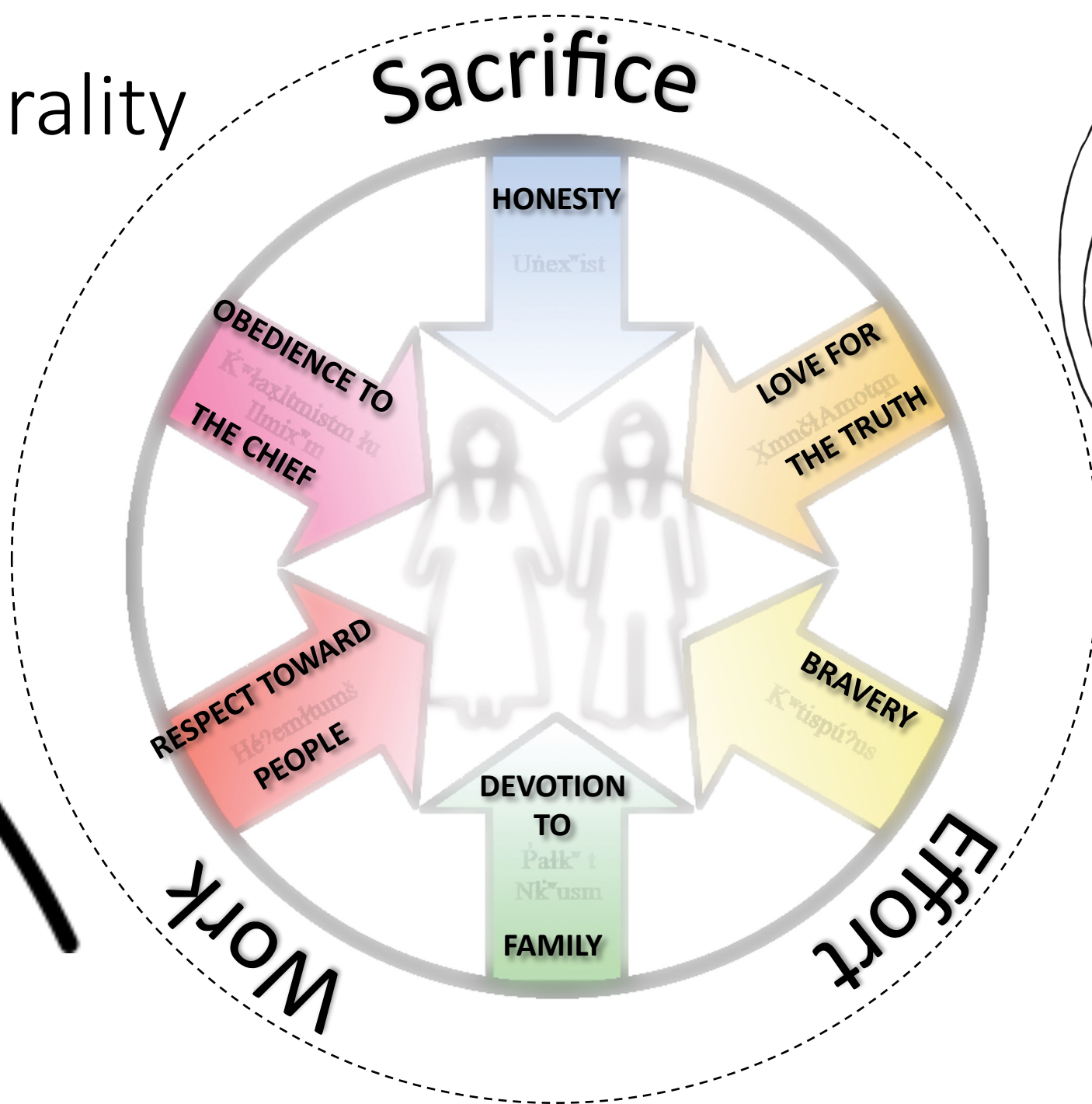
- Practical common sense based on the teachings and experiences passed on from generation to generation.
- Knowing its home - knowledge of the environment - snow, ice, weather, resources - and the relationships among things.
- Holistic; it cannot be compartmentalized and cannot be separated from the people. It is rooted in the spiritual health, culture and language of the people.
- A traditional authority system; setting out the rules governing the use of resources - respect, an obligation to share. It is dynamic, cumulative and stable. It is truth.
- A way of life - wisdom is using traditional knowledge in 'good' ways. It means using the heart and the head together. It survives because it comes from the spirit.
- Giving credibility to people.
- Serving community needs and interests first.
- Having the potential to realize that the real contributions of local and traditional knowledge incorporate knowledge of the ecosystem.
- Relationships and a code of ethics, govern the appropriate use of the environment.
- Recognizing that this code of ethics includes rules and conventions promoting desirable ecosystem relations, human-animal interactions and even social relationships.
- Enabling traditional knowledge to articulate with non-traditional knowledge to form a rich and distinctive understanding of life and the world.

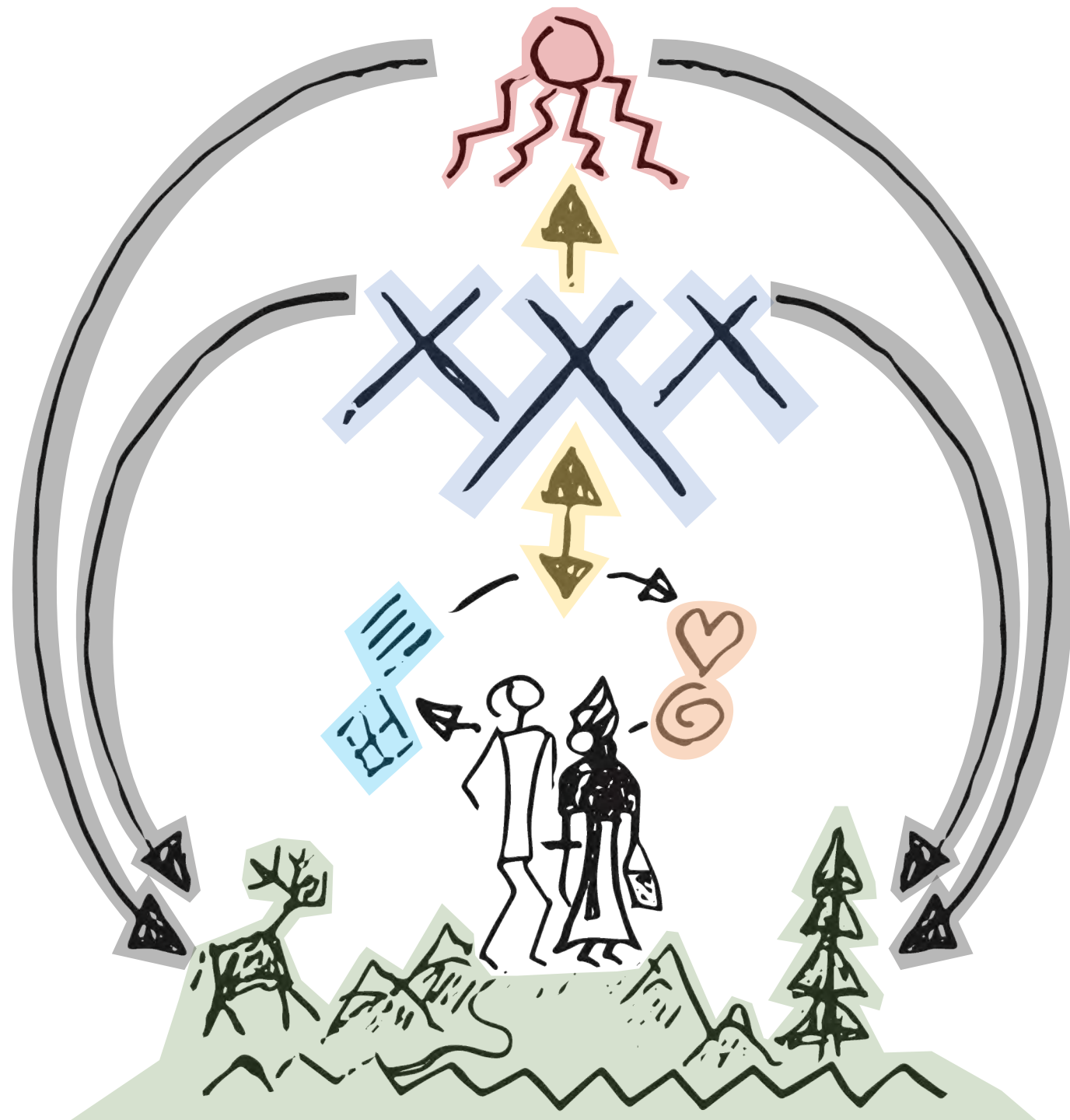
“Indigenous knowledge (IK) is part of the collective genius of humanity. It represents the accumulated experience, wisdom and know-how unique to nations, societies, and or communities of people, living in specific ecosystems of America, Africa, Asia, and Oceania. It represents the accumulated knowledge of the earth’s people that represent over 5000 languages and cultures contained in more than 70 nation-states.” However, this knowledge **has to be understood from an Indigenous context.** Knowledge is not a tangible thing, but its manifestations may be tangible.

Code of Morality



Code of Morality





K^wem̓t esya? ye qe sewłk^w ye qe nšiyétk^w

All our waters, our creeks

u xest es momo?op. Xest es eñesi.

were flowing good. It was good.



L šey ye l sewłk^w u łu x^w?it łu x^wix^weyuł

It is there in the water that is where there were many animals,

łu swewł łu t?e stem.

fish and other things.

K^wemt šey se nk^wúlex^w qe sq^wyúlex^w łi?e l sewłk^w...

And by that, we were wealthy from the water...

Mitch SmallSalmon, Qłispé, 1979

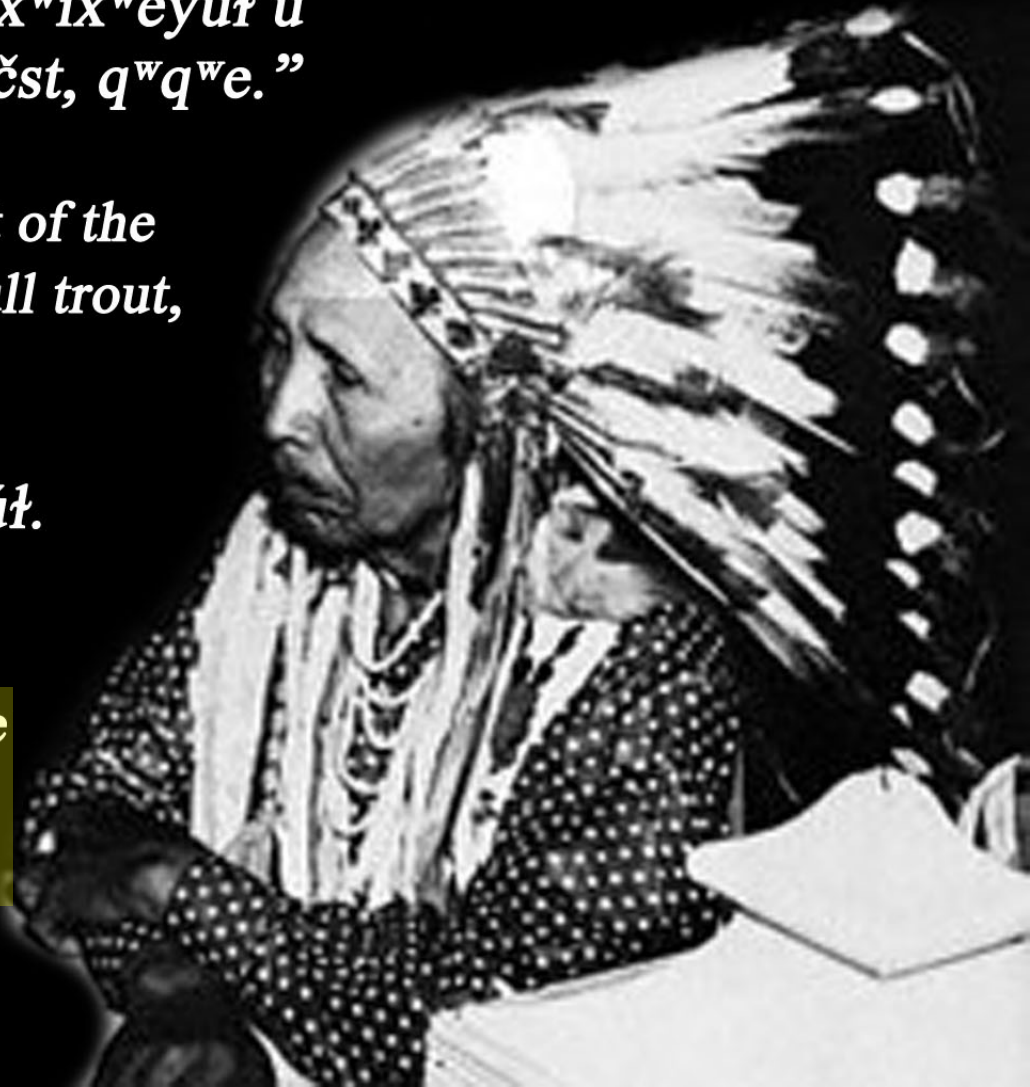
“T sox^wép u es ?i łu sqélix^w t sqsi, t spi?qałq u es iłn, t x^wix^weyúł u es ?i t sqeltč.... K^wemt ecxey łu swewł; smłi, piśł, aaycčst, q^wq^we.”

The people of long ago ate roots, ate berries and ate the meat of the animals.... And the same way with the fish; salmon, trout, bull trout, northern pikeminnow.

“K^wemt ecxey t x^wix^weyúł łu sqélix^w. Čsaxm č x^wix^weyúł. Ecxey t?es nmłmnwe łu sqélix^w l x^wix^weyúł.”

This is why the Indians were like the animals. They are close to the animals. It is as if the Indian people are mixed in with the animals.

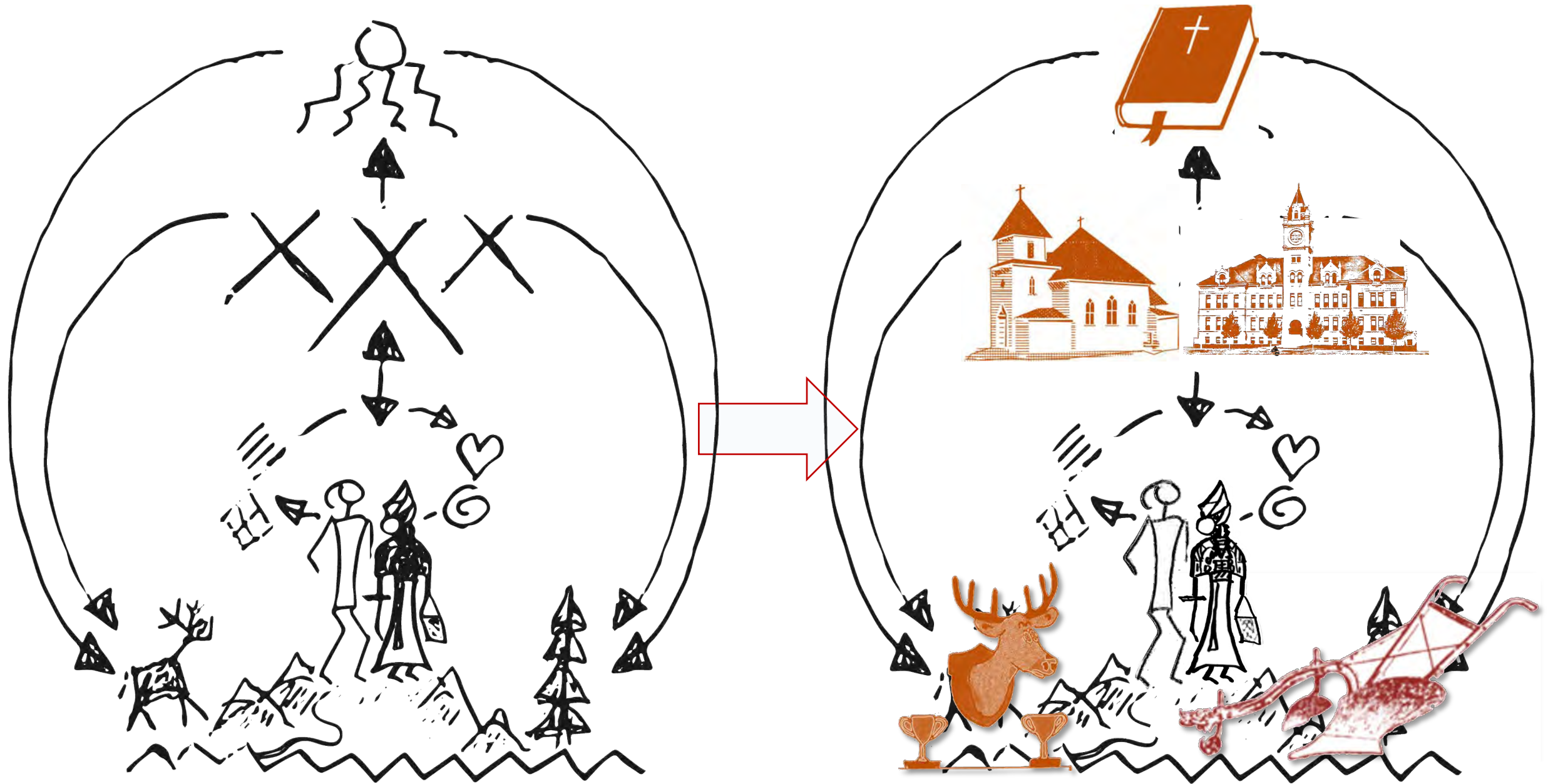
Pete Beaverhead, Qłispé, 1975

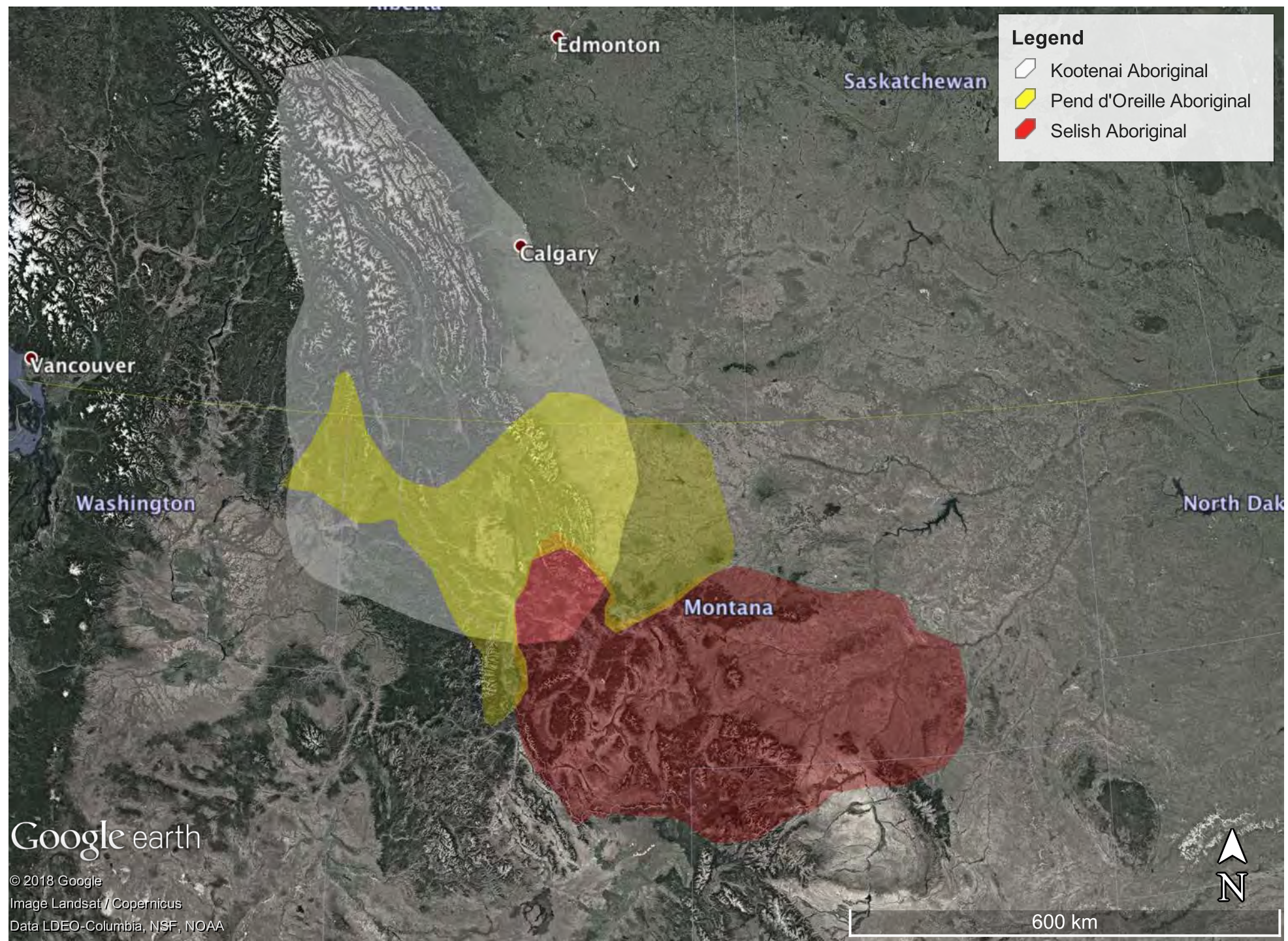


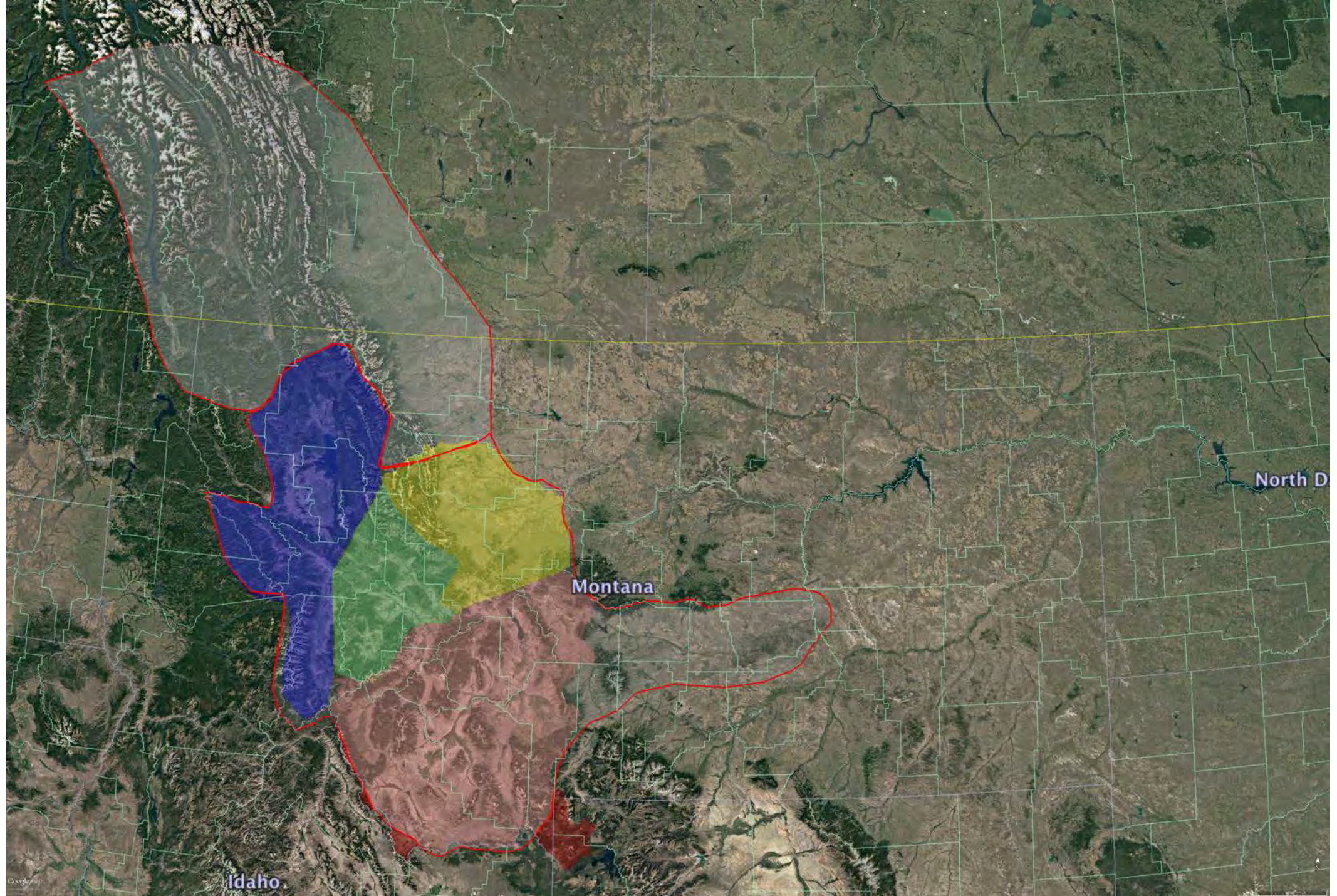
“It was our old people that were good; we had good chiefs; ...we are all good Indians, and we have a nice country ...we like our country; it is like our parents.”

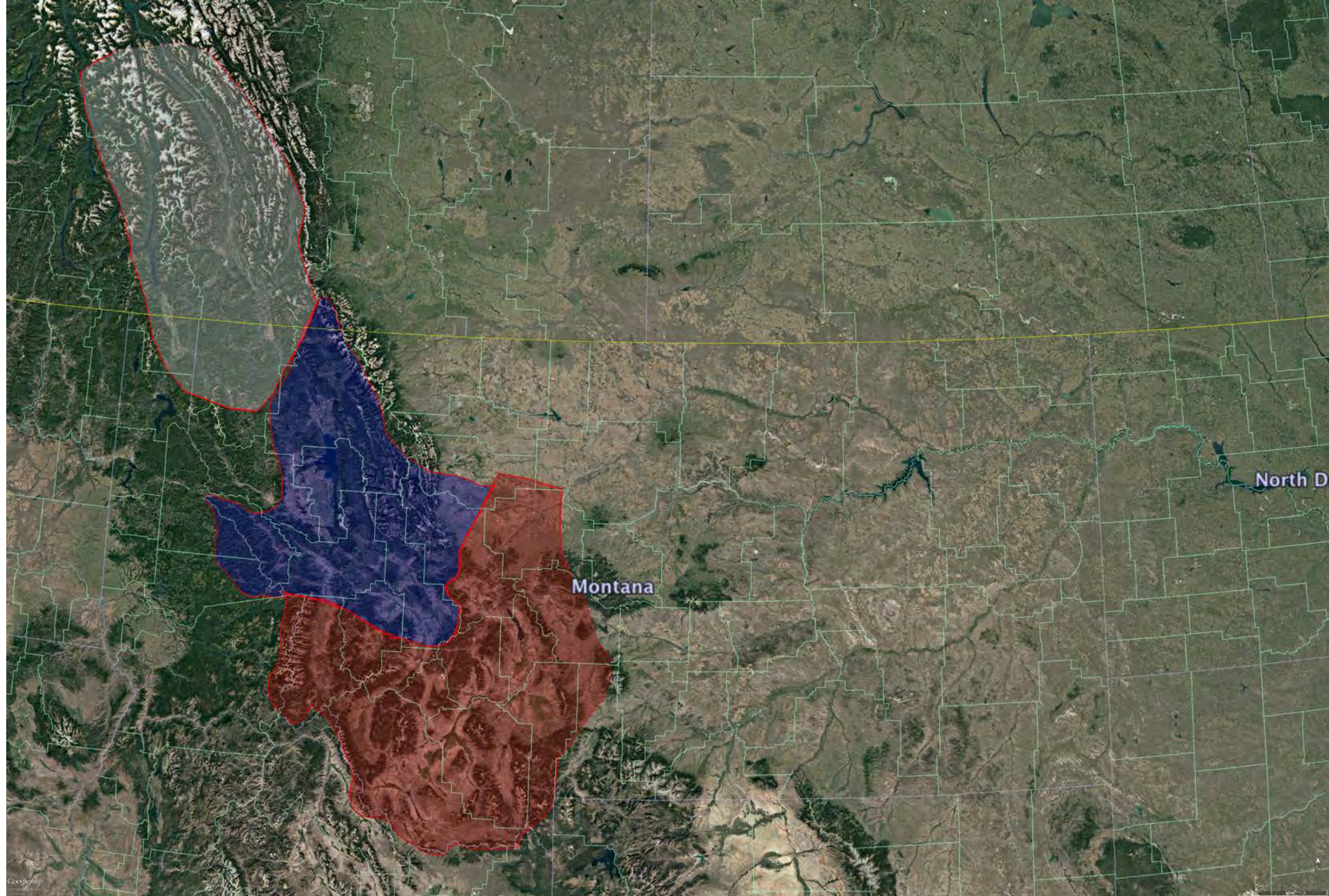
Arlee, Bitterroot Salish, 1882



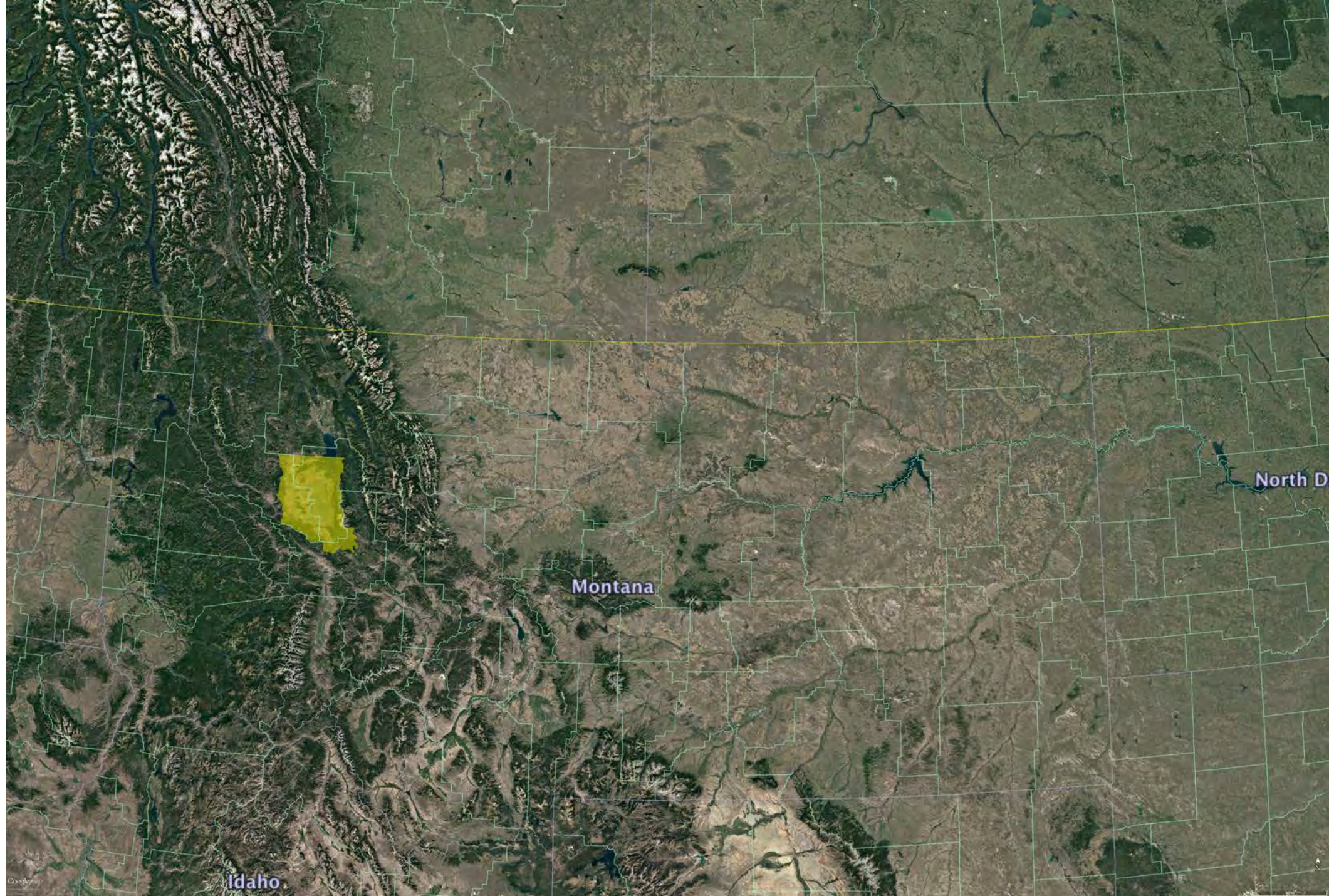






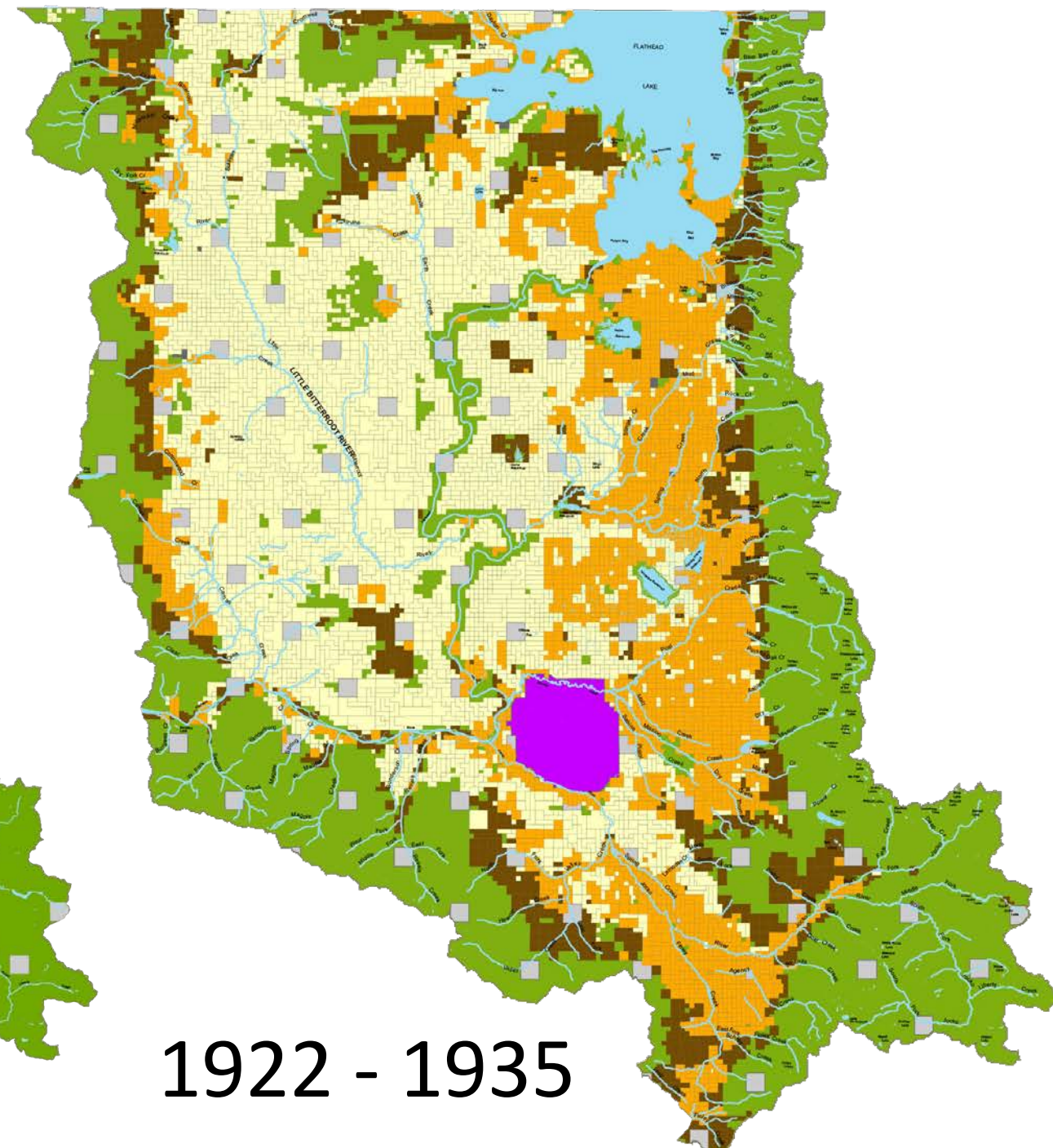
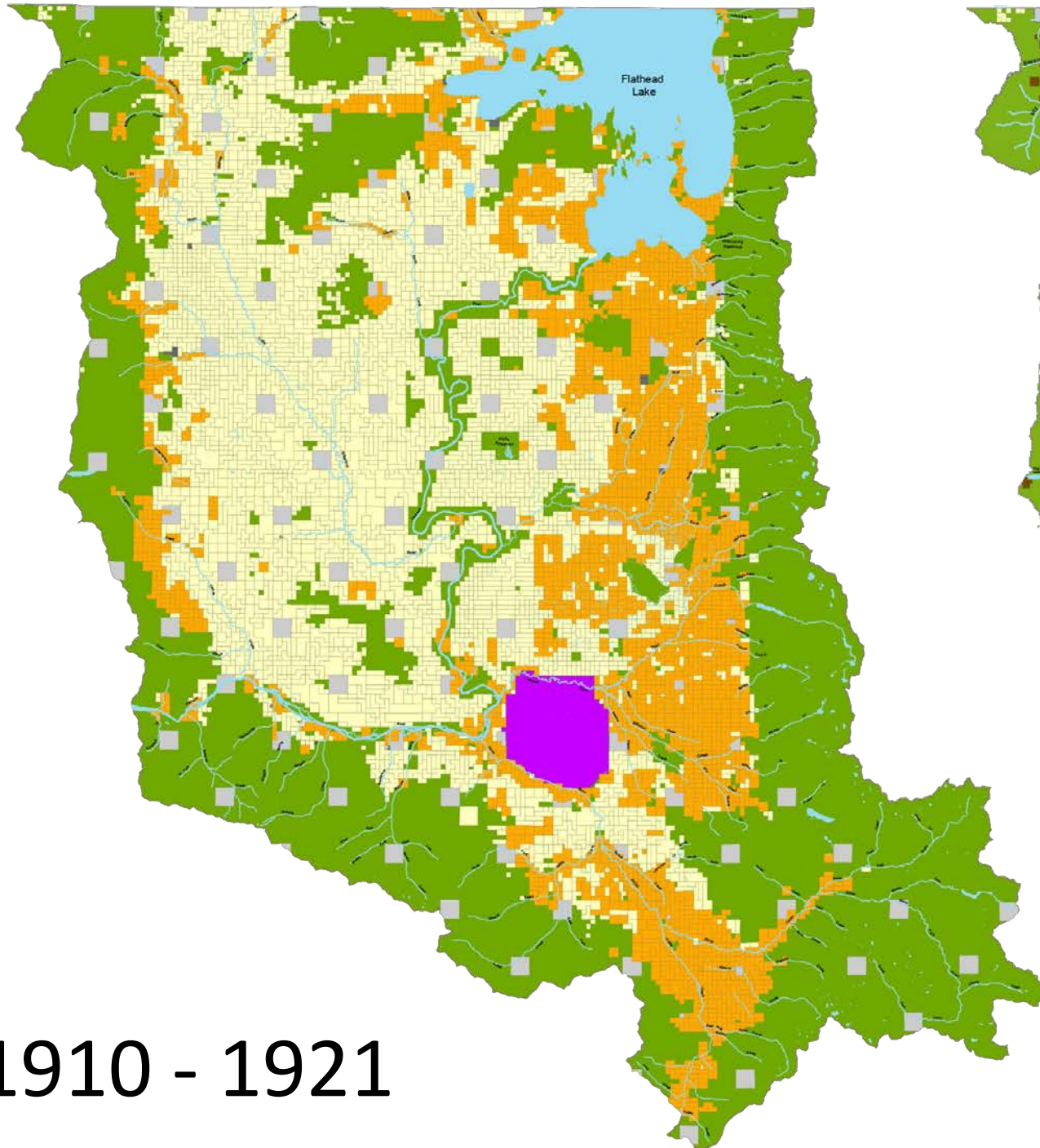




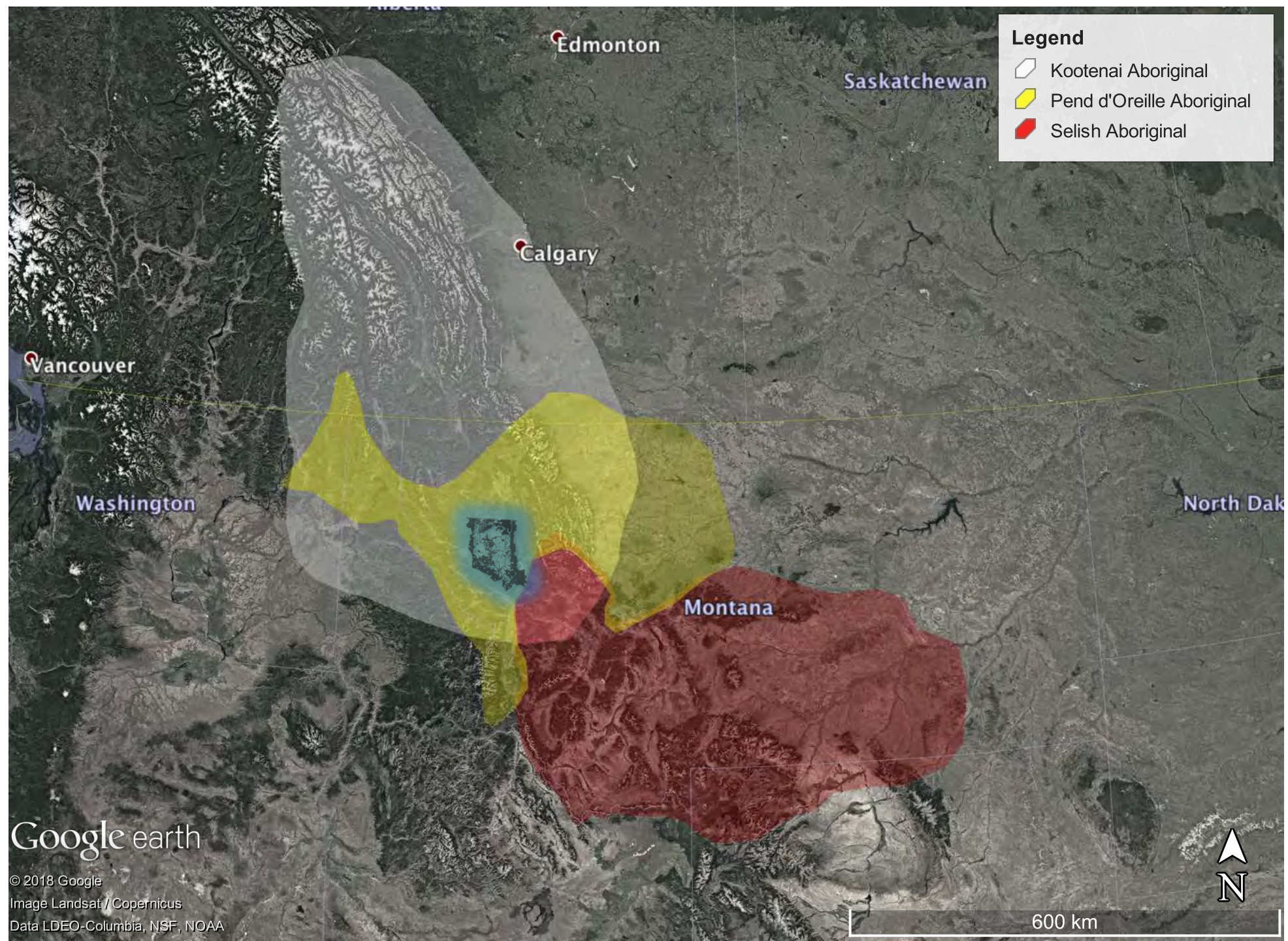




1908

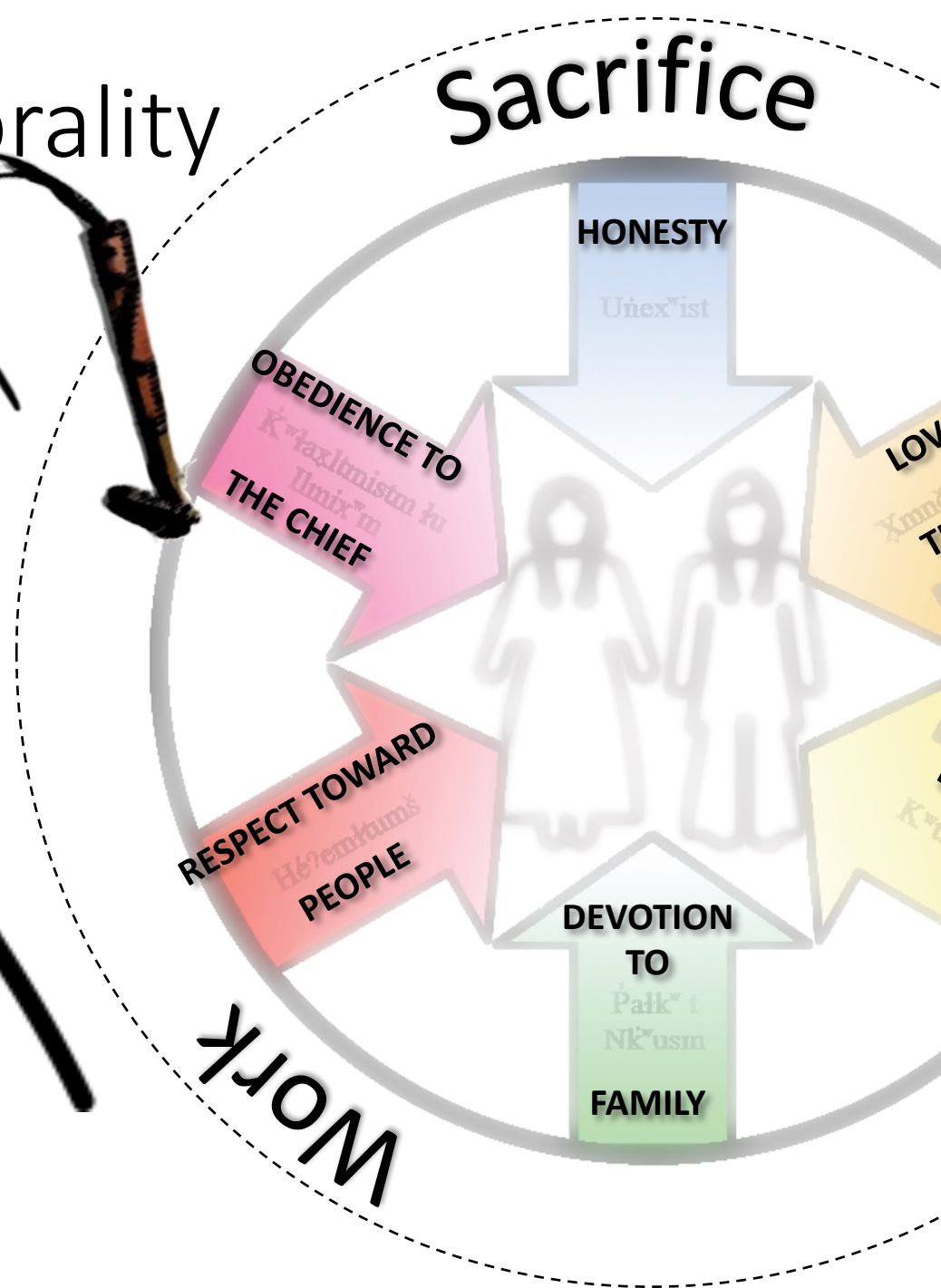






Code of Morality

Sacrifice

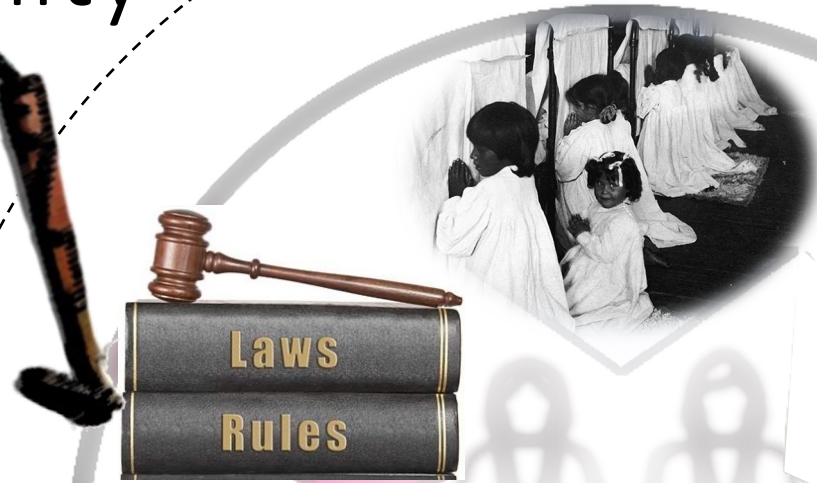


"We have neither chains nor prisons; and for want of them, no doubt, a great number of us are wicked and have deaf ears. As chief, I am determined to do my duty; I shall take a whip to punish the wicked; let all those who have been guilty of any misdemeanor present themselves; I am ready."

Tmłácin, Qlispé, 1859

Code of Morality

Sacrifice

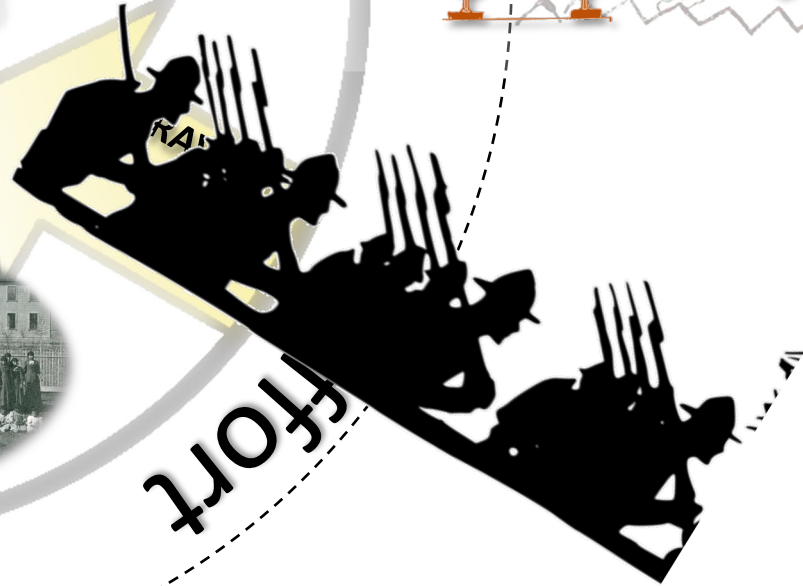


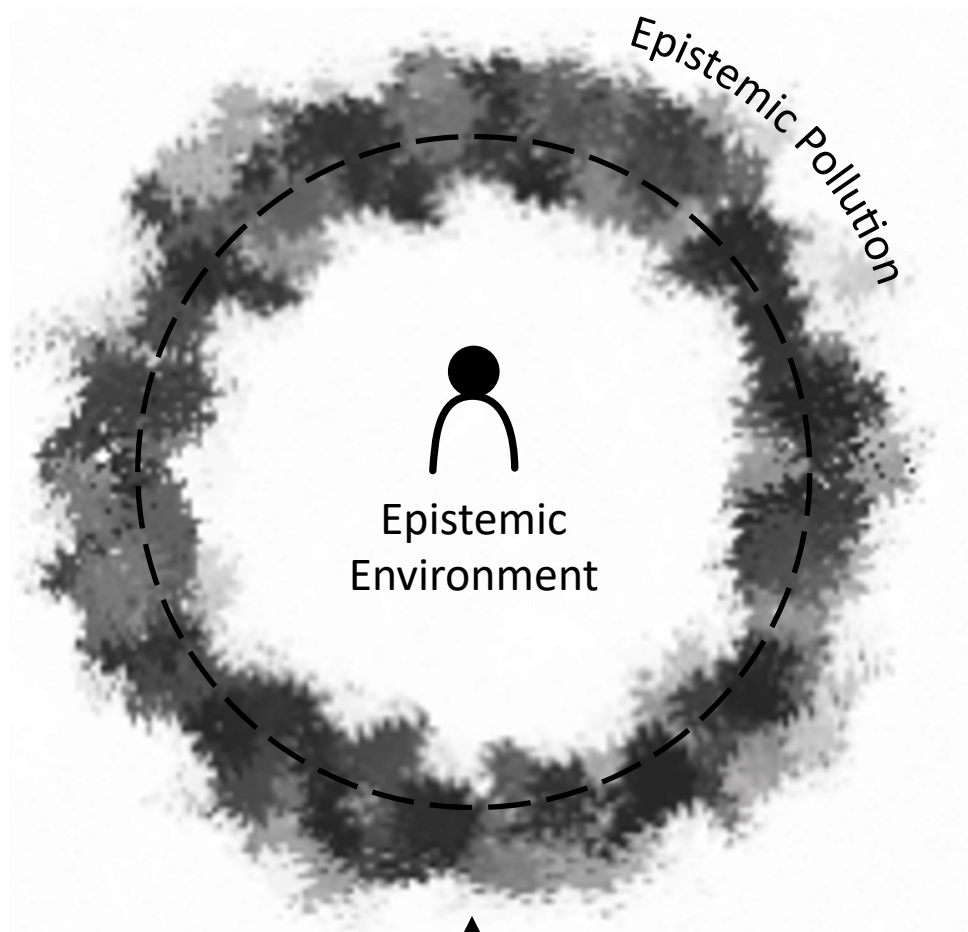
RESPECT TOWARD
PEOPLE

Work



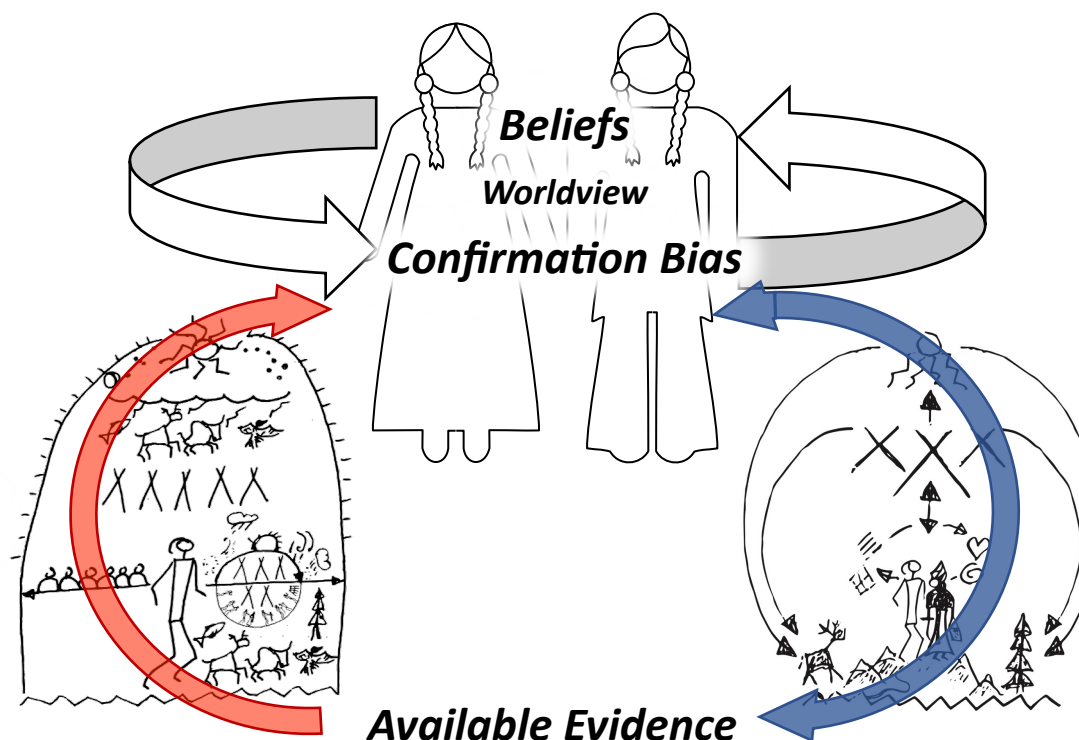
Effort



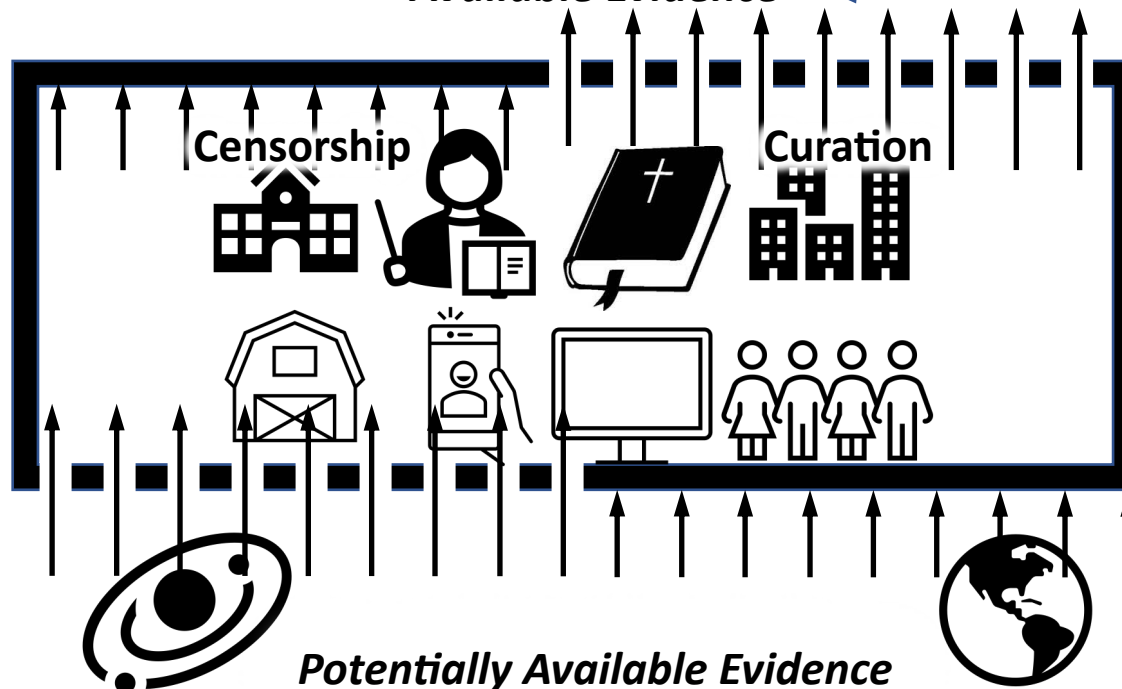


D_1

Cultural Influences
*"Evidence selected
for me"*



Openness to Experience
Curiosity - Attention
*"Evidence selected by
me"*



CREATIVITY BEGINS WITH A QUESTION....
IT BEGINS WITH NOT KNOWING...

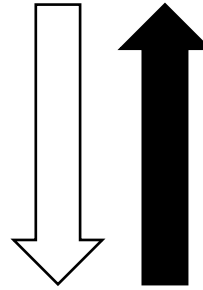
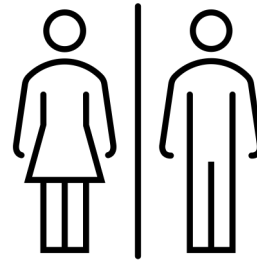


IT BEGINS WITH *WHY? WHAT IF?*

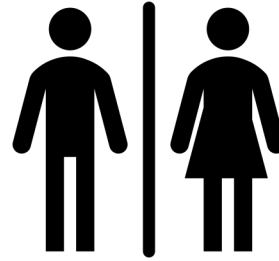


CAPACITOR

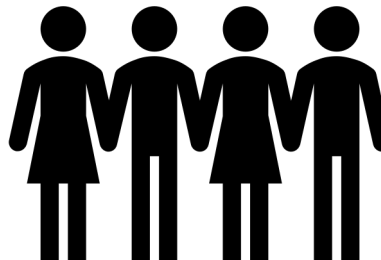
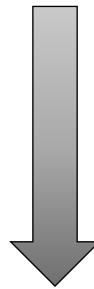
Source Virtue
Honesty, Sincerity, Trustworthiness,
Intellectual Generosity
“Disposition or traits to be good at telling information”



Receiver Virtue
Epistemic Justice (Credibility deficit and excess),
Intellectual Humility
“Disposition or trait to be good at listening to information”

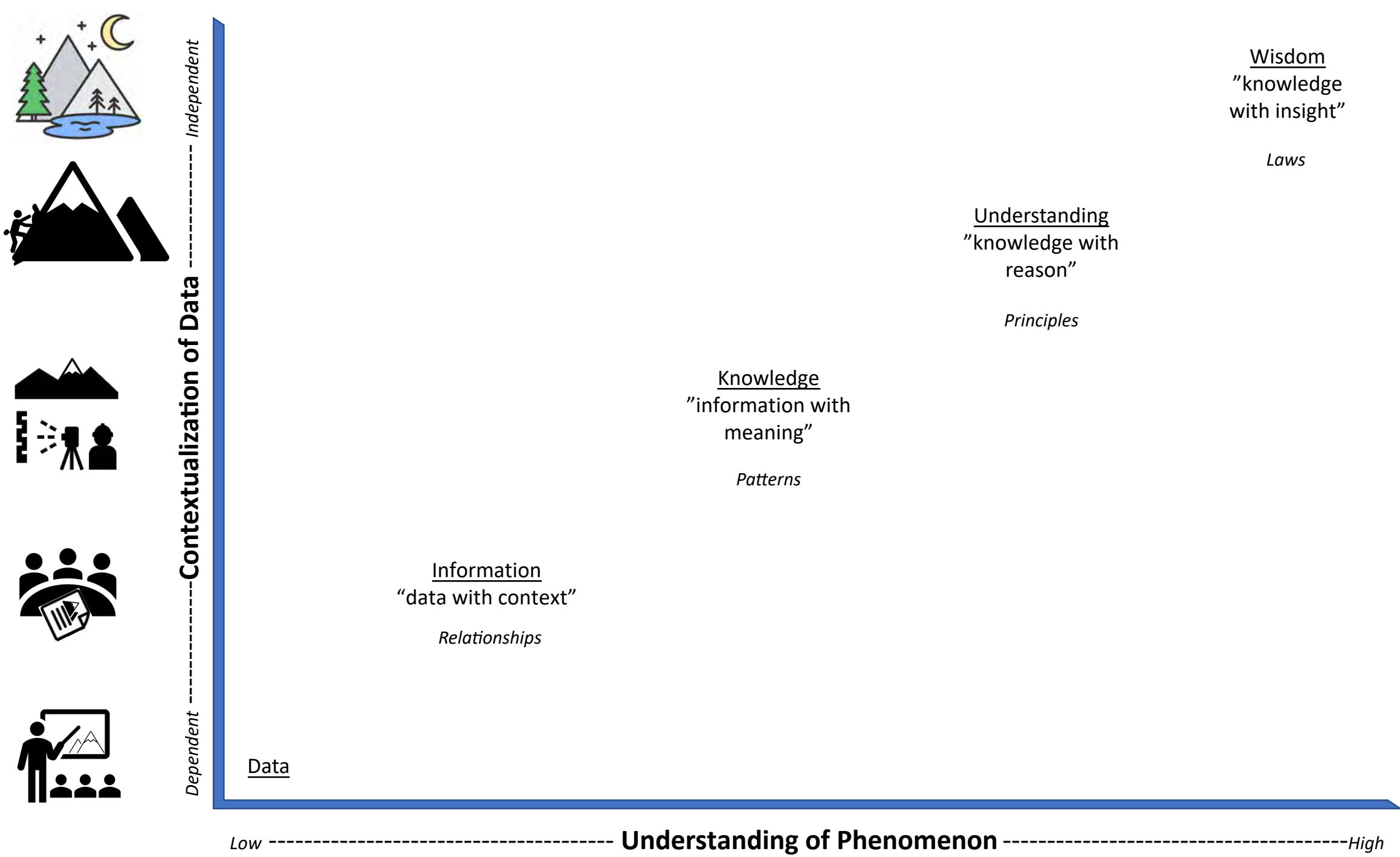


Conduit Virtue
Amplification, Gossip, Journalism, Ethnography
“Repeating and giving credit to the source of knowledge”



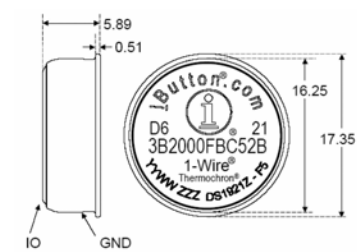
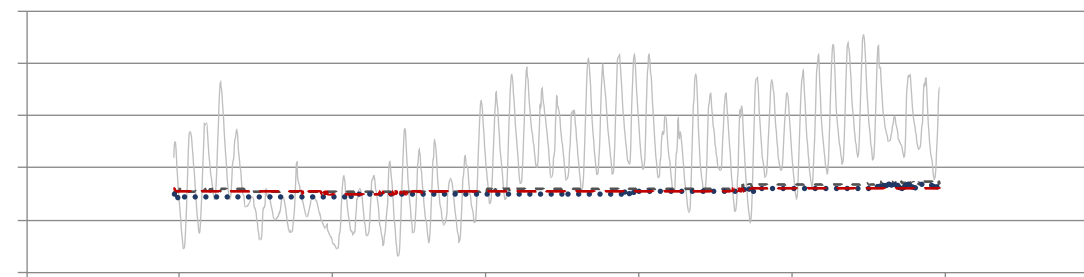
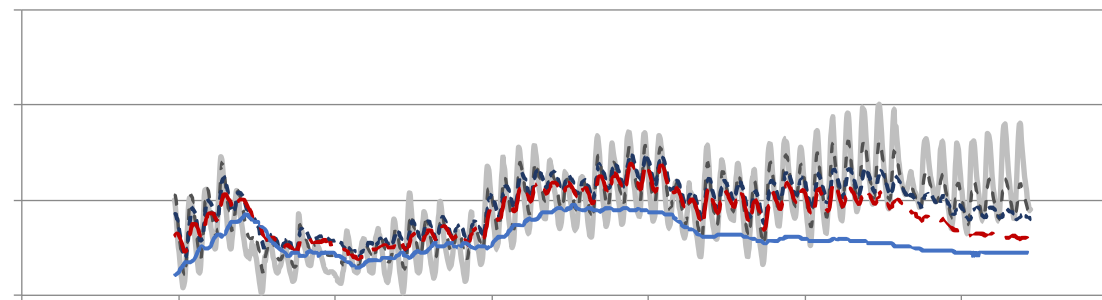
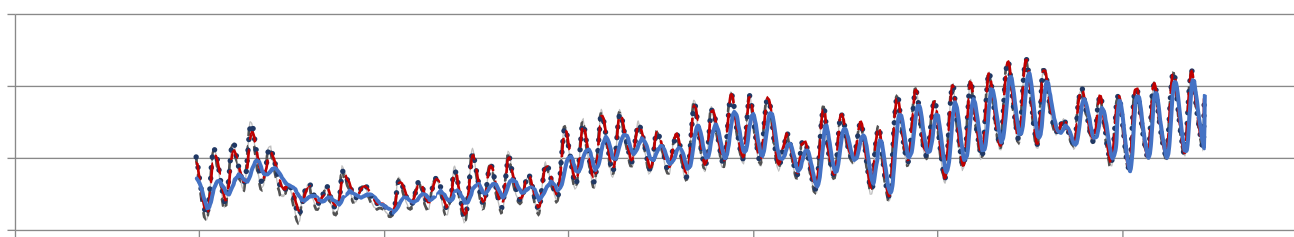
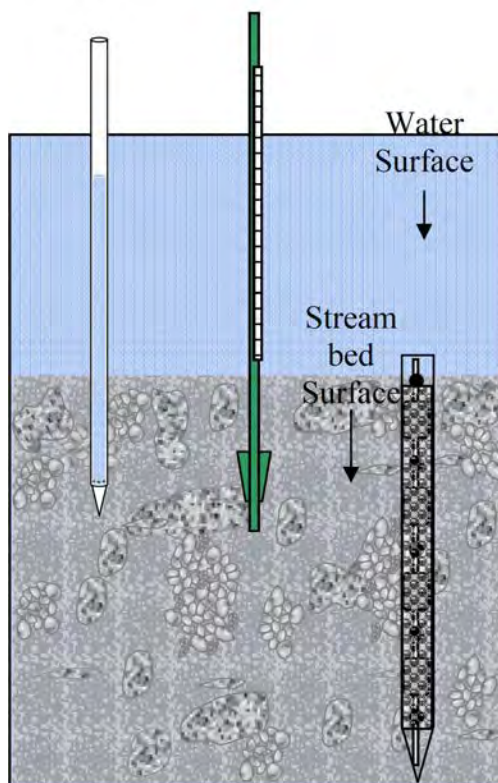


Metasedimentary rocks of the Belt Supergroup of Precambrian age form most of the Mission Mountain range.



Connection to Source of Data
"Lived Connections"

Data

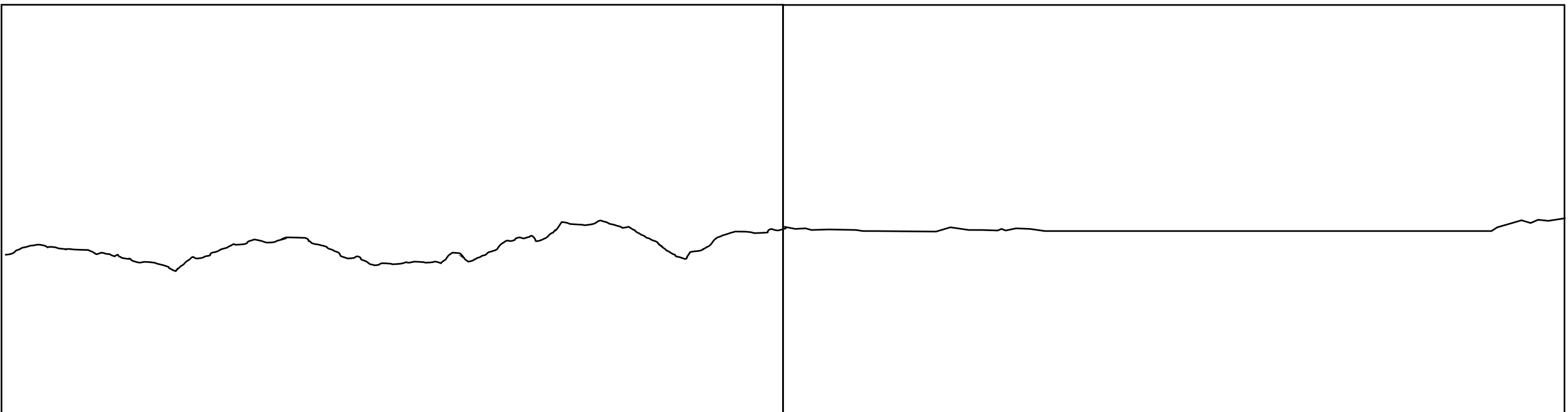


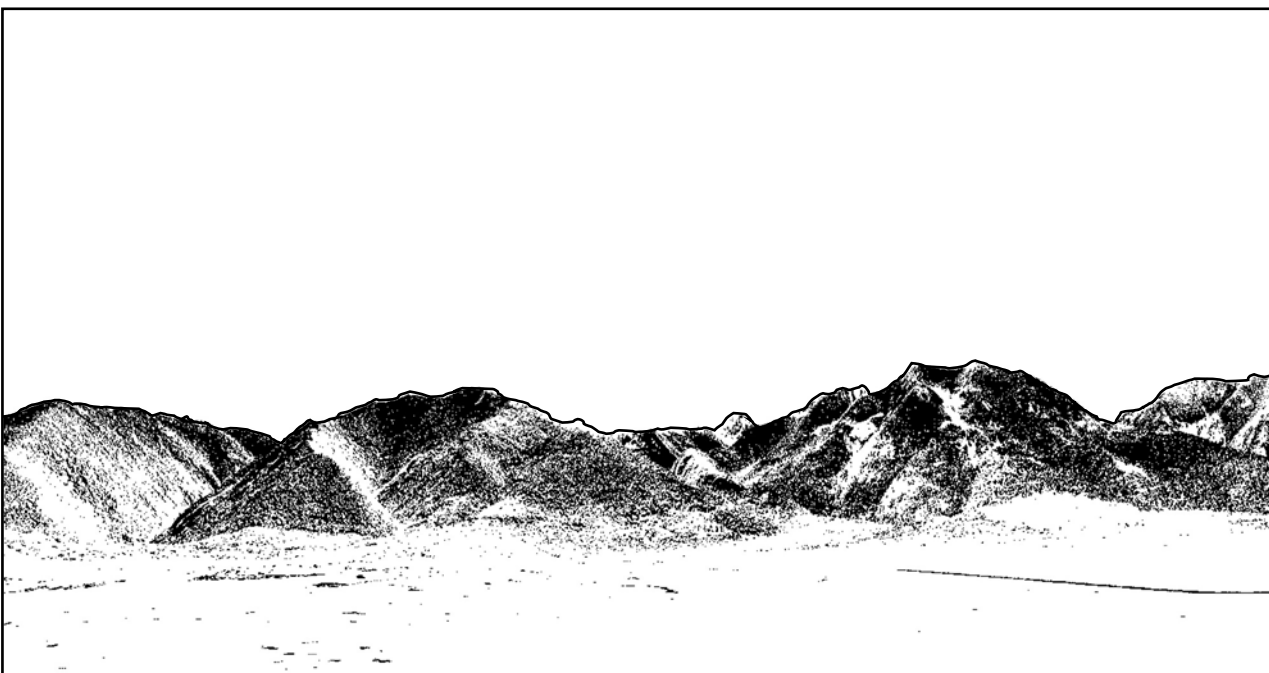
All dimensions are shown in millimeters.

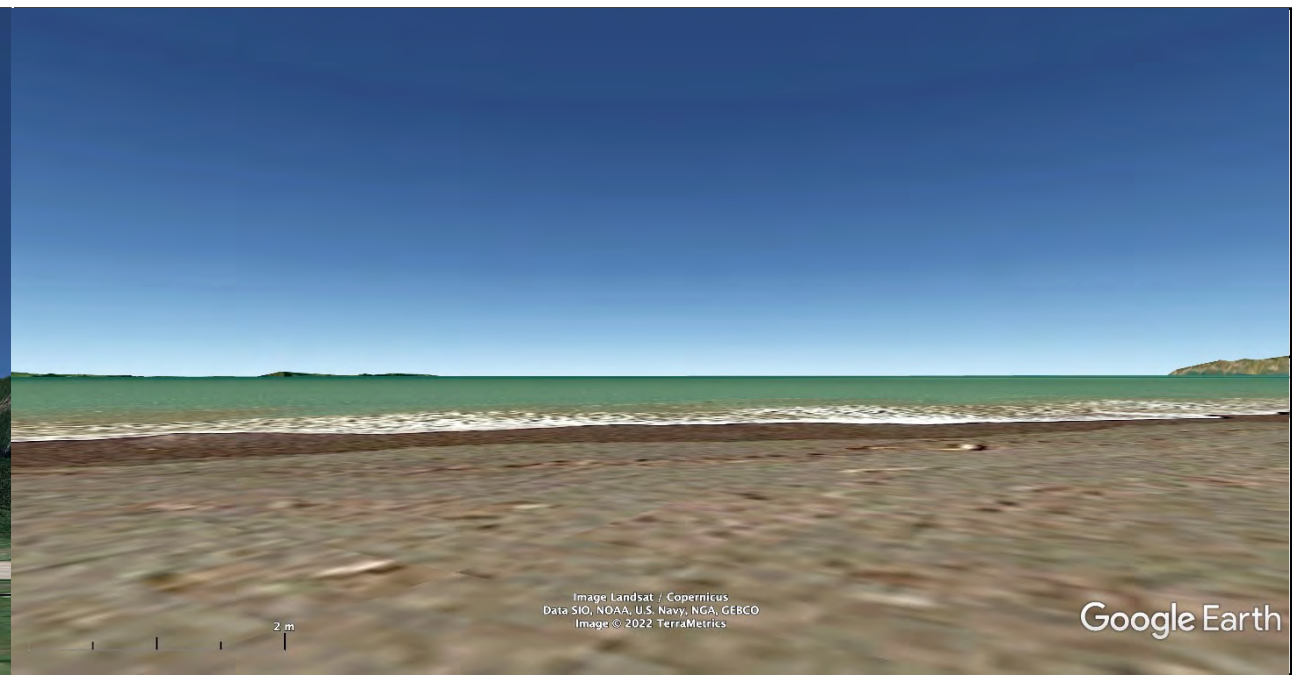
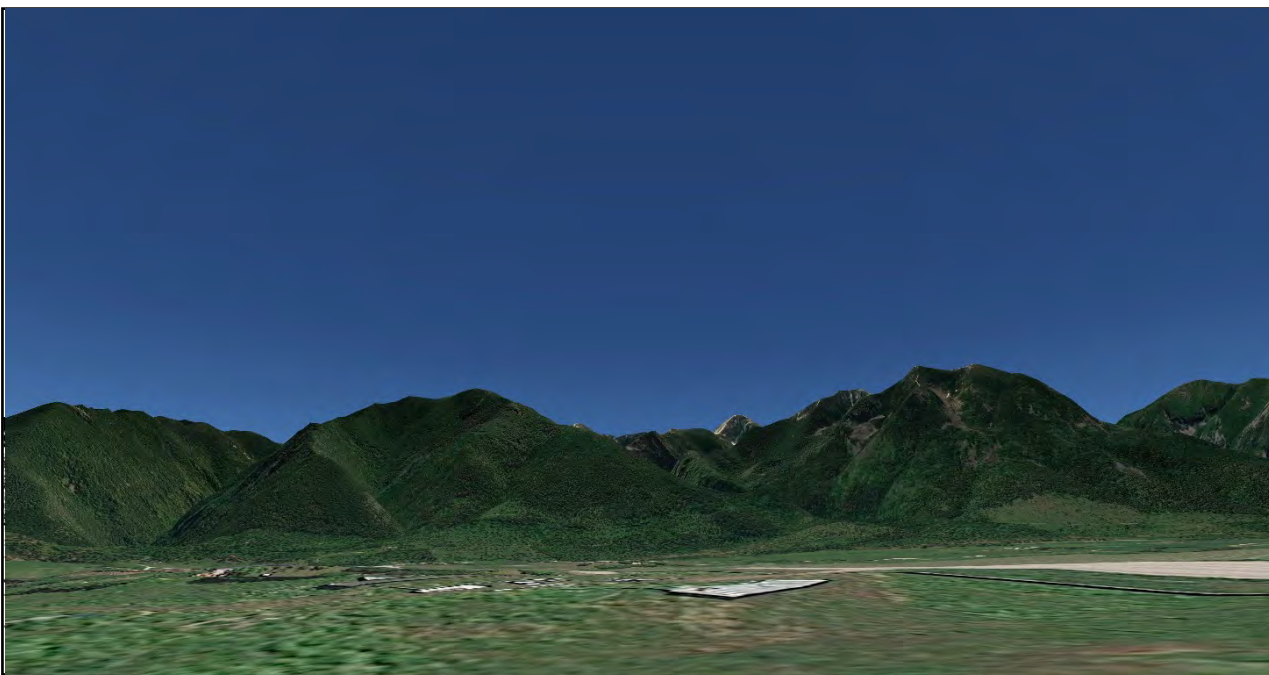
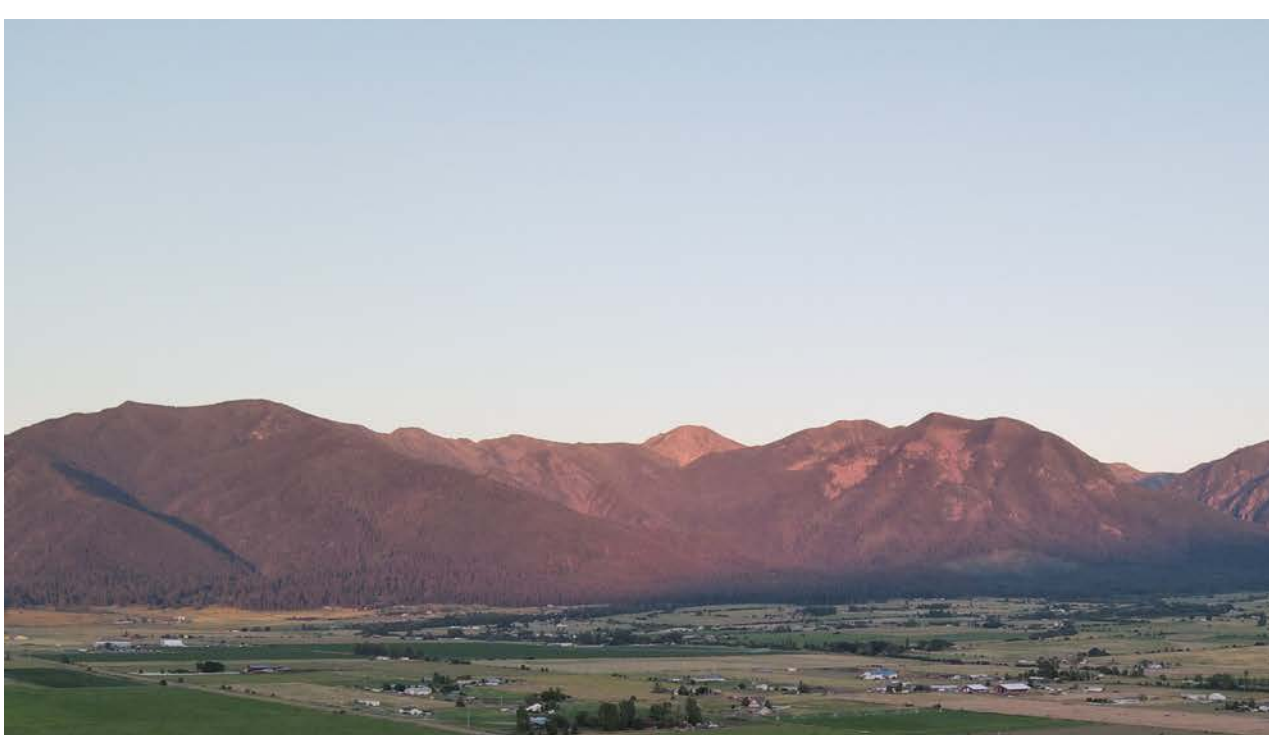


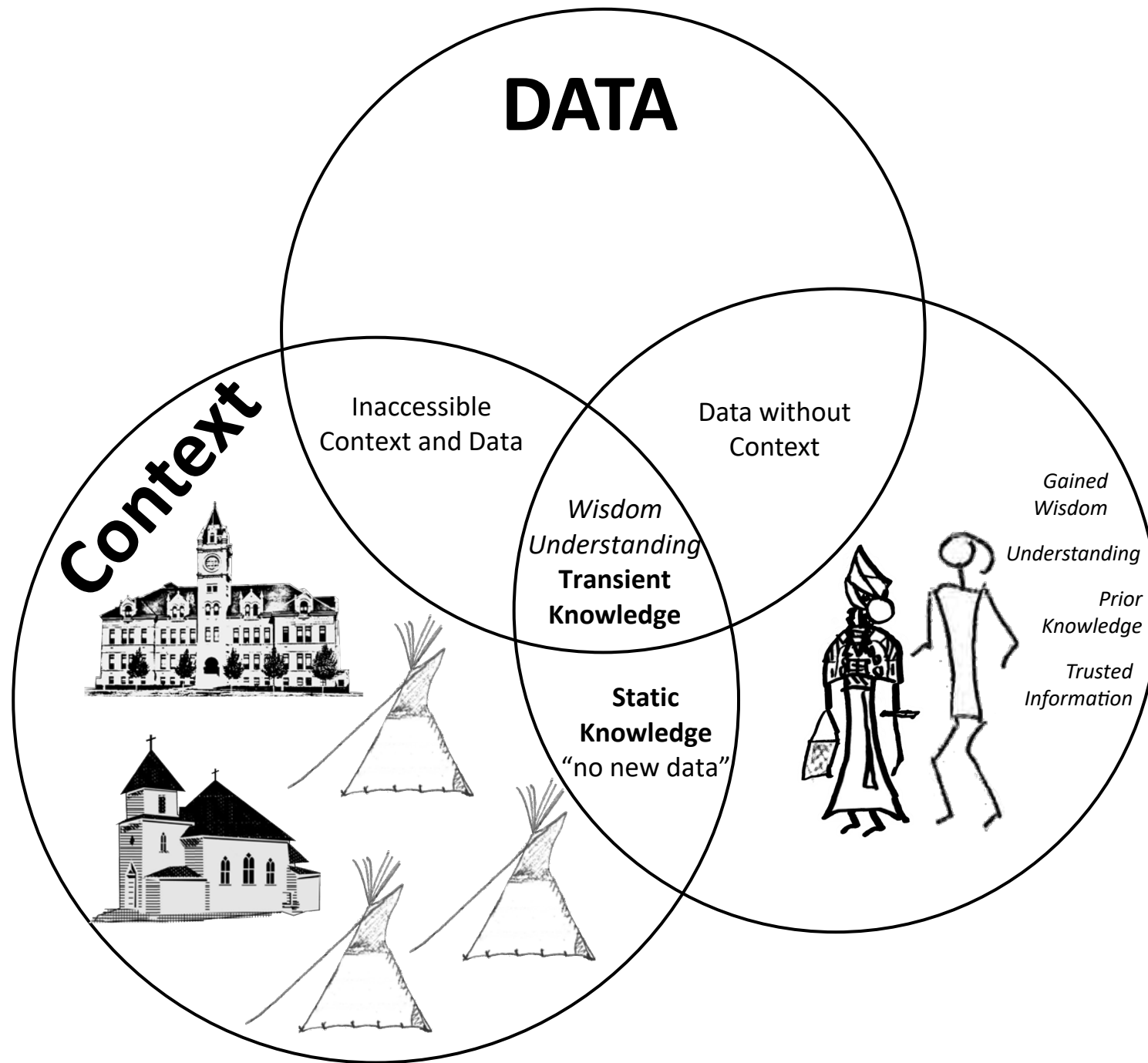
Understanding of Phenomenon
"Learned Understandings"











$$f(w) = \int f(x) e^{-2\pi i x w} dx \frac{dw}{2\pi}$$

$$\rho \left(\frac{\partial v}{\partial t} + v \cdot \nabla v \right) = -\nabla p + \nabla \cdot T + f$$

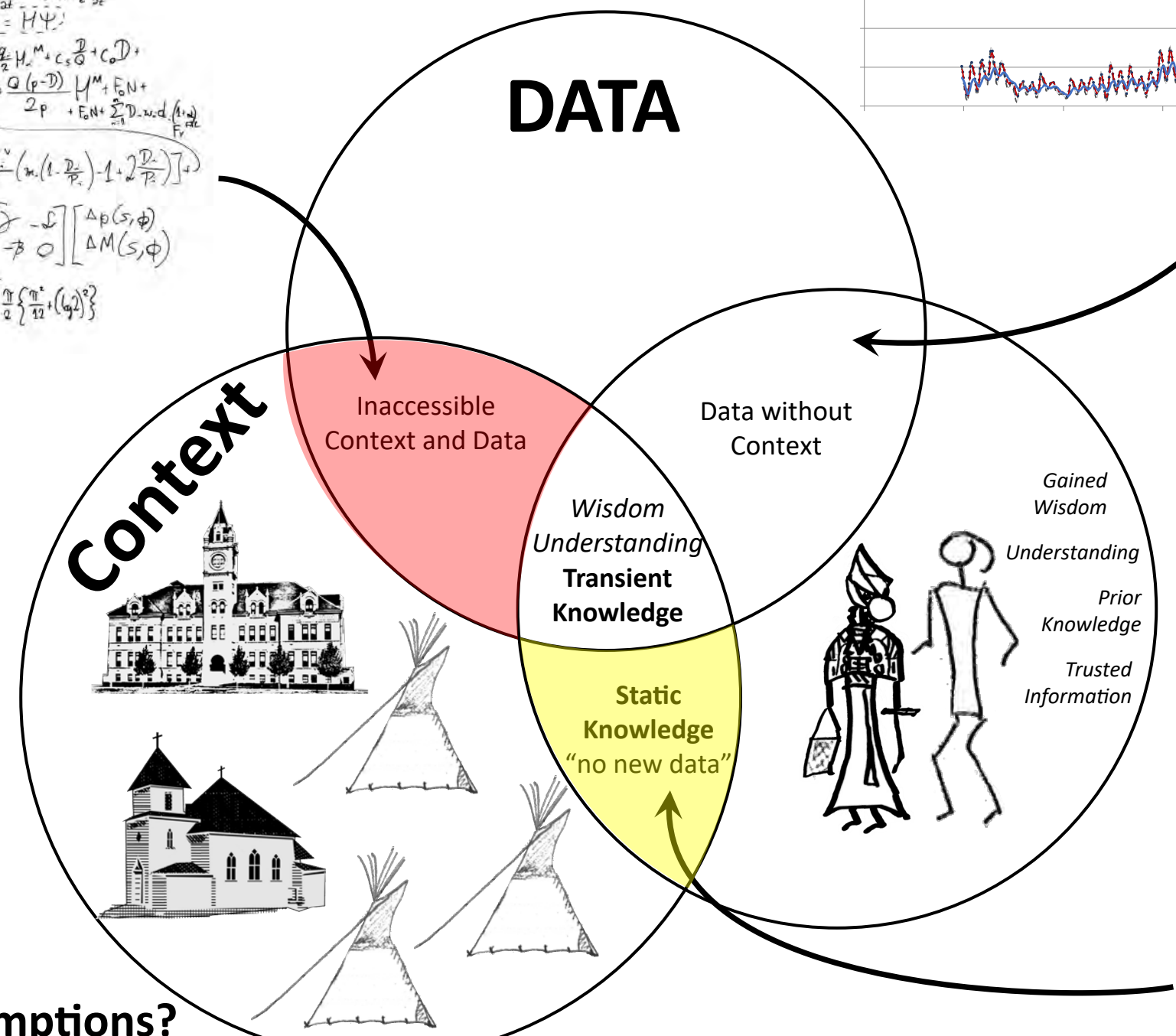
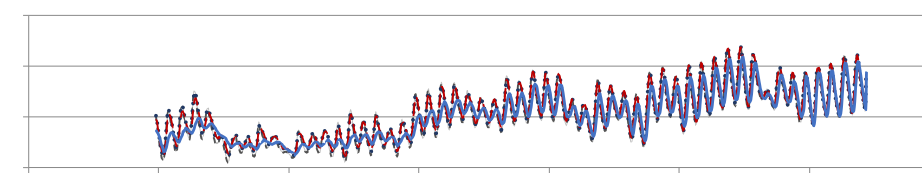
$$H = -\sum p(x) \log p(x)$$

$$\frac{1}{2} G^2 S^2 \frac{\partial^2 V}{\partial S^2} + r S \frac{\partial V}{\partial S} + \frac{\partial V}{\partial t} - r V = 0$$

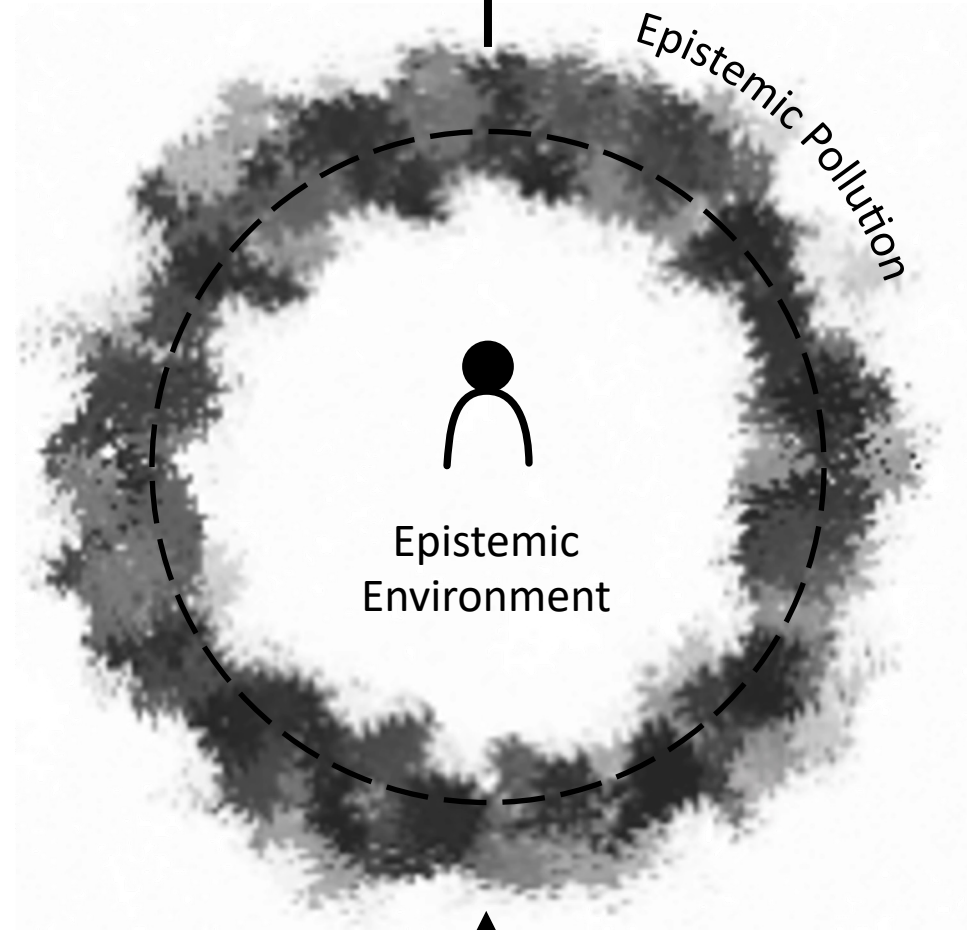
$$TC(Q, q, m) = \sum_{i=1}^n \left[\frac{D_i}{m_i q_i} S_{i1} + c_i D_i + \frac{q_i H_i}{2} \left(m_i \left(1 - \frac{D_i}{P_i} \right) - 1 + 2 \frac{D_i}{P_i} \right) \right]$$

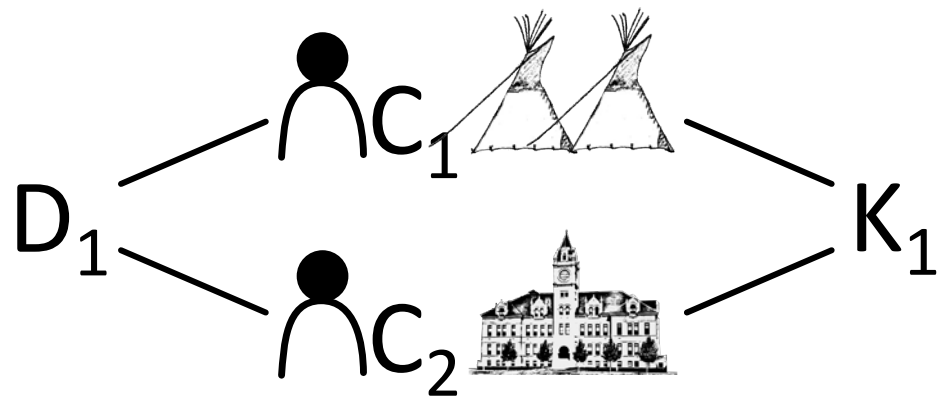
$$\left[\frac{d \Delta p(s, \phi)}{d \phi} \right] = \begin{bmatrix} \gamma & -\gamma \\ -\beta & 0 \end{bmatrix} \begin{bmatrix} \Delta p(s, \phi) \\ \Delta M(s, \phi) \end{bmatrix}$$

$$\int_0^1 (\log \sin x)^2 dx = -\frac{1}{2} \left\{ \frac{\pi^2}{12} + (\log 2)^2 \right\}$$

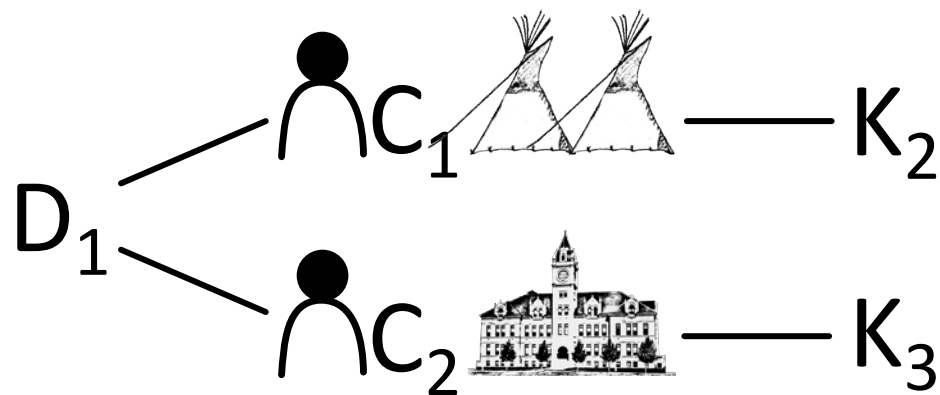


What are the assumptions?

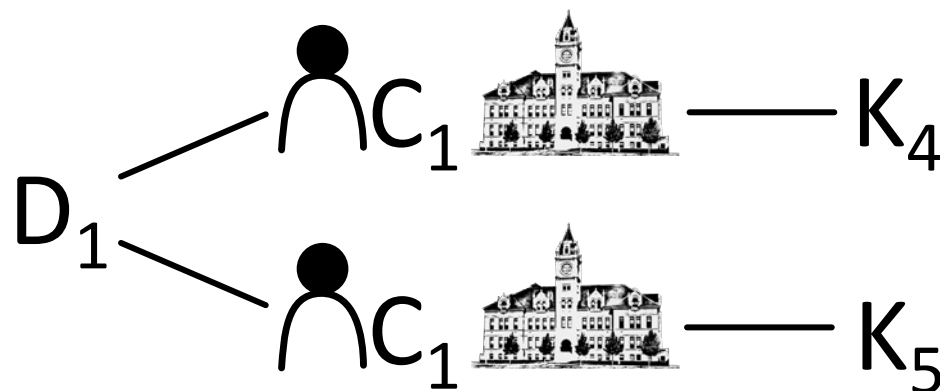




Data interpreted in two different context produce the same knowledge (Ideal)

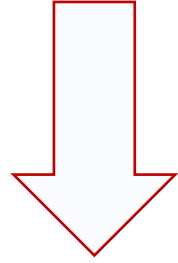


Data interpreted in two different context produce two different kinds of knowledge

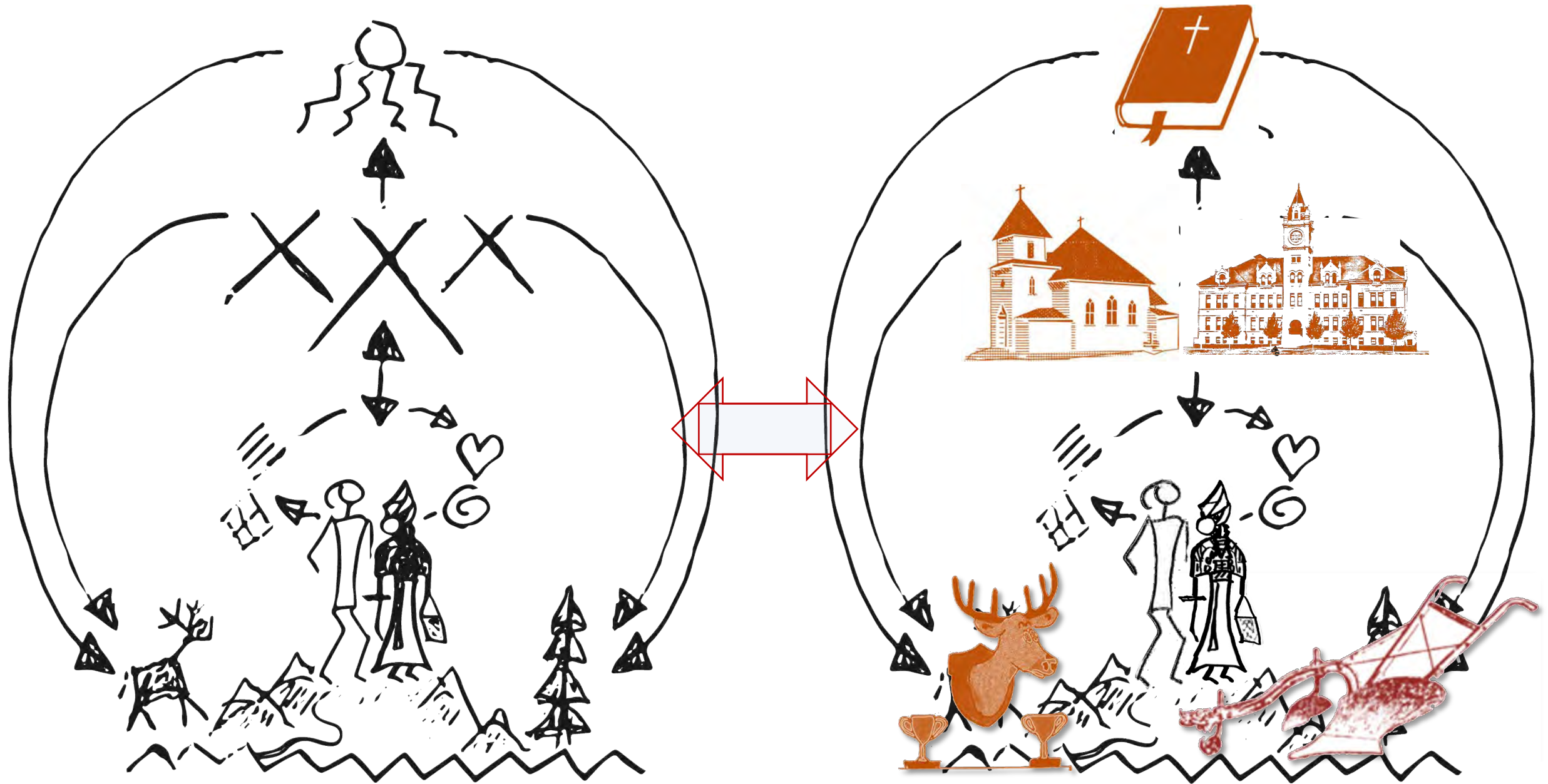


Data interpreted in the same context produce two different kinds of knowledge

...What is indigenous knowledge?

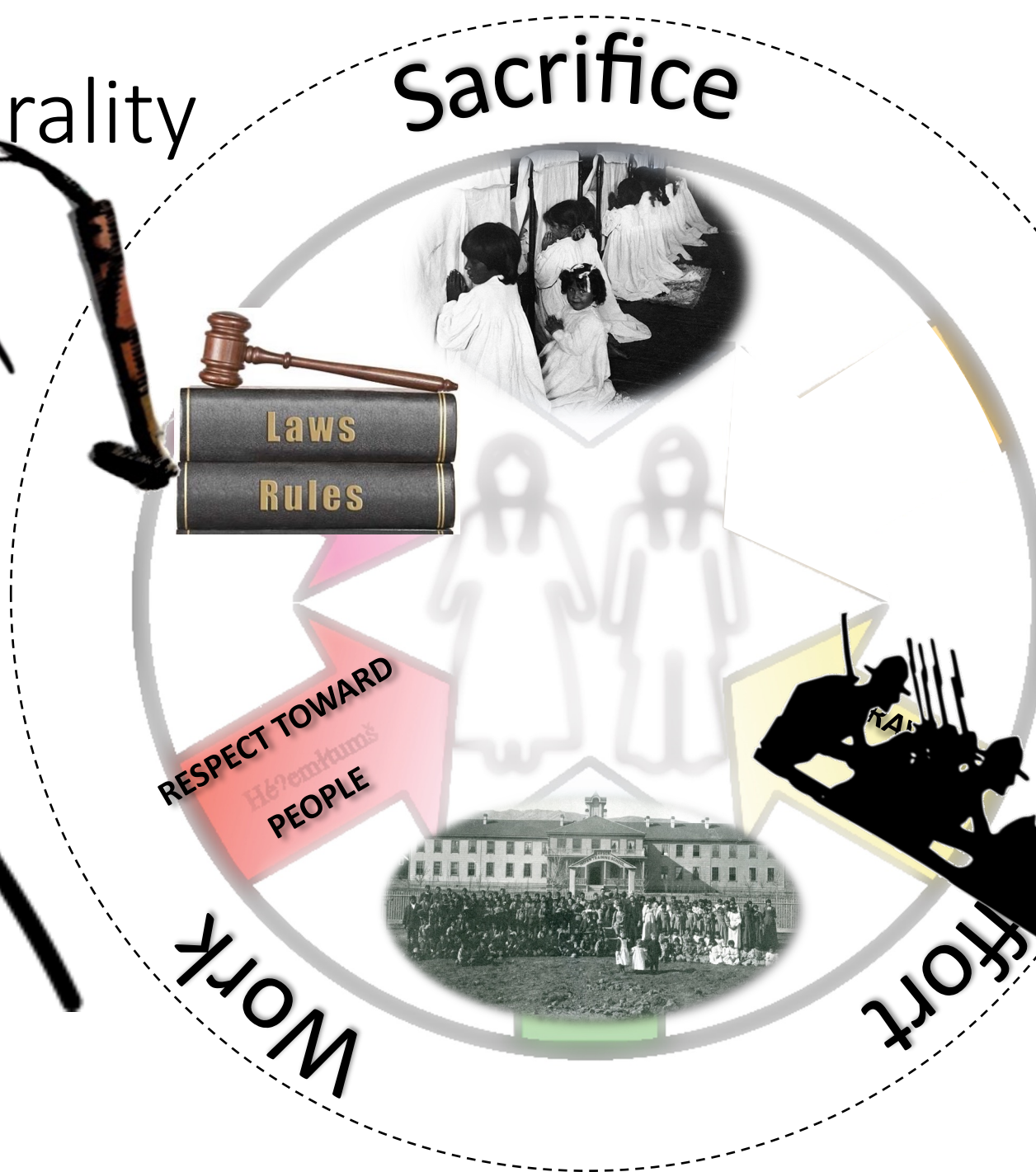


...What is knowledge?



Code of Morality

Sacrifice



More resources

- ▶ For more information on KT and to explore our resources: <https://healthresearchbc.ca/knowledge-translation/> and <https://ktpathways.ca>
- ▶ Archived webinar recordings: <https://healthresearchbc.ca/kt-webinars/>
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Michael Smith
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